

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
ALEXANDRIA DIVISION

-----X
UNITED STATES, et al., : Civil Action No.:
: 1:23-cv-108
Plaintiffs, :
versus : Monday, September 16, 2024
: Alexandria, Virginia
GOOGLE LLC, : Day 6 p.m.
: Pages 1-143
Defendant. :
-----X

The above-entitled bench trial was heard before the
Honorable Leonie M. Brinkema, United States District Judge.
This proceeding commenced at 2:00 p.m.

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1	TABLE OF CONTENTS
2	WITNESSES
3	On behalf of the Plaintiffs:
4	GABRIEL WEINTRAUB
5	Direct examination by Mr. Teslicko4
6	Cross-examination by Mr. Isaacson40
7	Redirect examination by Mr. Teslicko96
8	Recross examination by Mr. Isaacson110
9	ROSA ABRANTES-METZ
10	Direct examination by Mr. Vernon114
11	MISCELLANY
12	Proceedings September 16, 20244
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	

Direct Examination - G. Weintraub

1 hold an industrial engineering degree from the University of
2 Chile.

3 Q If you could, talk a little slower, Professor
4 Weintraub.

5 A Sure.

6 Q Outside of your researching and teaching about online
7 marketplaces, do you have any professional experience with
8 online marketplaces?

9 A Yeah, I do. I've been an advisor of several online
10 marketplaces, including Airbnb and AppNexus. Now we're
11 branded as Xandr.

12 Q And what kind of work did you do at AppNexus?

13 A I was there were chief economist for two years where I
14 was tasked to enhance the efficiencies of the marketplace.
15 AppNexus has an exchange --

16 (Reporter clarification.)

17 THE COURT: You are going to have to slow down
18 because, all right, because we have to be able to hear you.

19 THE WITNESS: Okay. I'll repeat the answer.
20 Apologies.

21 So I was AppNexus chief economist for around two
22 years where I was tasked with enhancing the efficiencies of
23 their marketplace, the exchange that they run. And I was
24 involved also in some product improvement initiatives.

25 MR. TESLICKO: At this time, Your Honor, we would

Direct Examination - G. Weintraub

1 move into evidence Professor Weintraub's CV which is in your
2 binder. It's Plaintiff's Trial Exhibit 1779.

3 MR. ISAACSON: No objection.

4 THE COURT: It's in.

5 MR. TESLICKO: And we would also offer Professor
6 Weintraub at this time as an expert in operations, data
7 science, and market design with a focus on digital
8 platforms.

9 THE COURT: Any objection?

10 MR. ISAACSON: No objection.

11 THE COURT: All right. He's so qualified.

12 BY MR. TESLICKO

13 Q Professor Weintraub, can you crew describe your
14 assignment in this case?

15 A My assignment was to study the impact of Google's
16 conducts, if any, on market participants with a particular
17 emphasis on estimating, quantifying the impact on rival
18 scale.

19 Q And at a high level, what opinions did you reach about
20 the effect of Google's conduct on its rivals?

21 A I concluded that Google's conducts decreased rival
22 scale, and when considering the totality of the conducts,
23 their persistent effect that they diminished rival's ability
24 to compete.

25 Q Before we get to the substance of those opinions, I

Direct Examination - G. Weintraub

1 want to take a step back and ensure the Court understands
2 what you looked at and what you're describing. You said you
3 evaluated the impact of Google's conduct on rival scale.
4 What do you mean by scale?

5 A So at a high level, scale typically is a measure of the
6 size of a firm, and we typically think that larger scale
7 enhances the operations. A firm makes the operations more
8 efficient.

9 Q And how does scale relate, if at all, to ad tech
10 products?

11 A Scale plays a critical role in ad tech products because
12 of a few dimensions that I'd like to explain. Actually, I
13 prepared some slides that may be helpful to do so?

14 MR. TESLICKO: Your Honor, at this time, we'd like
15 to display demonstratives that we've shared with Google's
16 counsel to which they have no objection that further explain
17 Professor Weintraub's testimony today.

18 THE COURT: Again, no objection, correct?

19 MR. ISAACSON: No objection.

20 THE COURT: All right. That's fine.

21 MR. TESLICKO: If we could, pull up the first one.

22 BY MR. TESLICKO

23 Q Professor Weintraub, using what's been marked as
24 Plaintiff's Demonstrative N, can you describe how scale
25 relates to ad tech products?

Direct Examination - G. Weintraub

1 A So I think there's at least two important dimensions of
2 scale in ad tech products. One is what I will refer to
3 thickness. The second one is what I would refer to
4 transaction volume.

5 Q Let's take those in turn. What do you mean by
6 thickness?

7 A So let's think of an exchange, a market where there's
8 buyers, and I think there will be advertisers. There are
9 sellers. I think there will be publishers. So thickness is
10 a measure of the number and diversity of buyers on one side
11 of the market and the number and diversity of the sellers on
12 the other side of the market.

13 Q And the other metric of scale you identify is
14 transaction volume. What is transaction volume?

15 A There's several metrics associated with transaction
16 volume. We can think of impressions, one. We can think of
17 monetary measures, such as ad spend, the amount of money
18 flowing through the platform. We can think about queries,
19 the number of selling opportunities or buying opportunities
20 for that matter. And if we divide impressions by queries,
21 we get the so-called win rate.

22 (Reporter clarification.)

23 A So from the total number of opportunities, the number
24 of impressions at the platform actually wins.

25 Q Let's turn now to why these dimensions of scale matter

Direct Examination - G. Weintraub

1 to ad tech products. Starting with thickness, why does
2 thickness matter for ad tech products?

3 A So let's think of increasing first the thickness on the
4 buying side. So there's a larger set, a more diverse set of
5 advertisers, and now a user comes up. And impression is
6 available. Because there's more in a more diverse set of
7 advertisers, it is more likely that that impression will
8 find an advertiser that values the impression, that wants to
9 buy the impression. And therefore, it's more likely that
10 the publisher will sell the impression and potentially at a
11 larger price.

12 So thickness, a larger thickness in that sense
13 increases transaction volume. So there's maybe more
14 impressions, more ad spend.

15 If we think about the other side, the other side
16 of the market, let's assume that the thickness on the
17 publisher's side increases, so there is more in a more
18 diverse set of publishers now. And advertisers that wants
19 to reach a user will find it more likely to find an
20 impression that they value. So in that sense, the quality
21 of the match -- of a match between the buyer and the
22 impression goes up.

23 Q And you just mentioned there that as thickness
24 improves, the quality of the match improves. What do you
25 mean by the quality of the match?

Direct Examination - G. Weintraub

1 A So it may be helpful to provide an example, like a good
2 example. Just to come up with one to provide a concrete
3 example, let's think of a vegetarian of lots of recipes and
4 there's a vegetarian page and a vegan restaurant wants to
5 advertise in that page. So I would think that the match
6 between the vegan restaurant and the vegetarian recipe would
7 be a high quality match because the vegan restaurant will
8 presumably reach the users it wants to reach. It presumably
9 would be a higher quality match than say a steakhouse in
10 that same vegetarian recipe page.

11 Q Now, the Court has already heard some testimony about
12 indirect network effects. What connection, if any, is there
13 between the concept of thickness that you're describing and
14 the concept of indirect network effects?

15 A There's a close connection between thickness and direct
16 network effects that I would like to explain perhaps in the
17 next figure.

18 Thank you.

19 So if we start in the left side of this figure,
20 this is showing -- you know, more publishers join. So the
21 thickness on the selling side increases. As I was just
22 discussing, this would likely result in better much
23 impressions. Advertisers will more likely find what they
24 like. In turn, the platform becomes more attractive for
25 advertisers, so more advertisers may join, which that will

Direct Examination - G. Weintraub

1 create more demand for the publisher inventory. And that
2 itself makes the platform even more attractive for
3 publishers. So there's like a feedback loop where an
4 initial increase in thickness gets amplified into the
5 future.

6 Q Now, you just described what happens when there is an
7 initial increase in thickness that gets amplified. What
8 happens if there is a decrease in thickness on one side of a
9 platform?

10 A So because of the same concept of indirect network
11 effects, you get the opposite -- you know, the opposite
12 feedback loop in the opposite direction, like a downward
13 spiral. There's a negative feedback loop associated to an
14 initial decrease in thickness.

15 Q Professor Weintraub, in addition to thickness, you
16 mentioned that another dimension of scale is transaction
17 volume. As part of your work, did you compare the relative
18 transaction volume on Google's ad tech products to those of
19 rivals?

20 A I did. I think the results are in the next figure. So
21 this is showing over a time arising between 2015 and the end
22 of 2022, the transaction volume of Google AdX in terms of
23 monthly impressions relative to several of its competitors.
24 And what the picture shows, Google AdX is the line at the
25 very top, the redline at the very top. The competitors'

Direct Examination - G. Weintraub

1 rival exchanges are the lines at the very bottom. And what
2 this shows is the rivals are over this entire time horizon
3 many times smaller than Google AdX in terms of transaction
4 volume.

5 MR. TESLICKO: Your Honor, at this time, we'd move
6 into evidence Plaintiff's Trial Exhibit 1314, which is the
7 summary exhibit that this graph is based on. And I
8 understand Google has no objection. And if it would be more
9 convenient with the Court, there's a number of other summary
10 exhibits that are related to Professor Weintraub's testimony
11 that we could move in all at the same time that have also
12 been shared with Google without objection.

13 THE COURT: Google agrees?

14 MR. ISAACSON: However you want to proceed, yes,
15 we have no objection to this.

16 THE COURT: Let me hear them all at this time.

17 MR. TESLICKO: Sure. Plaintiff's Trial
18 Exhibit 1314 --

19 THE COURT: All right.

20 MR. TESLICKO: 1333, 1334, 1335, 1336, and 1466.

21 MR. ISAACSON: I believe we have no objections to
22 those.

23 THE COURT: All right. Those six exhibits are all
24 in.

25 MR. TESLICKO: Thank you, Your Honor oh.

Direct Examination - G. Weintraub

1 BY MR. TESLICKO

2 Q Now, Professor Weintraub, with the context you provided
3 about the relative transaction volume on Google versus
4 rivals, can you explain why transaction volume matters to ad
5 tech products?

6 A Transaction volume plays an important role when running
7 ad tech products because of a few different reasons. So
8 larger transaction volume and enhances the ability of ad
9 tech firms to experiment around the so-called A/B test,
10 enhances the firm's ability to train algorithms and also
11 makes a firm more cost efficient. And all of these things
12 ultimately allows the firms to increase the quality of its
13 products.

14 Q Let's walk through each of these starting with
15 experiments. What kind of experiments do ad tech firms run?

16 A So these are experiments, also called A/B tests that
17 have become very common, not just in ad tech but in tech
18 companies more broadly, which are used to test the impact of
19 a new feature, a product change before it is deployed
20 platformwide.

21 Okay. So how does an experiment work? Typically,
22 a fraction of traffic will be allocated to the experiment.
23 That fraction will be split 50/50 in a random way. One
24 half, one 50 will get -- one 50 percent will get the *status*
25 *quo*, the current feature. The other 50 percent will get the

Direct Examination - G. Weintraub

1 new feature, the product change. The experiment will run
2 for some amount of time. At the, end some metrics of
3 interest will be compared between the two groups. And based
4 on that comparison, typically, a decision will be made
5 whether this new feature or product change that was tested
6 is deployed platformwide or not.

7 Q And how does a company's transaction volume impact its
8 ability to run the types of experiments you're describing?

9 A So the larger transaction volume a firm has, the better
10 able --

11 (Reporter clarification.)

12 A A firm has, it's better able to collect the data
13 necessary to obtain statistically rigorous results when
14 running such experiments, and it may be helpful to
15 illustrate this with an example.

16 Thank you.

17 So this is -- let's think of something concrete.
18 So Google wants to test a new feature. Let's say it's
19 tweaking the algorithm that decides which amount of sources
20 to call. It is tweaking the algorithm. It wants to run an
21 experiment to determine whether this new feature will
22 increase the win rate by some amount. So a typical amount
23 would be something like .05 percent, .05 percent increase in
24 win rate.

25 So based on Google's scale, on Google's -- I'm

Direct Examination - G. Weintraub

1 using their own data -- it will take Google to run this
2 experiment a single day to obtain statistically valid
3 results for this experiment to test this feature.

4 Now, if we look to a smaller exchange, which I
5 think you also have in the figure -- we have redacted the
6 name, but this is also based on actual data of a smaller
7 exchange. It will take that exchange 15 days to run the
8 same experiment. And yet, if we consider an even smaller
9 exchange -- also, the name has been redacted, but I'm also
10 using real data here. Their -- it would take this exchange
11 30 days to run the same experiment and obtain statistically
12 valid results.

13 Q And just to clarify, since we've had to anonymize the
14 name here, Firm E and Firm H, do those represent real ad
15 techs exchanges that operate in the market today?

16 A Correct.

17 Q And why does it matter, Professor Weintraub, that it
18 would take Firm E 15 days or Firm H 30 days to run the
19 experiment that Google can run in one day?

20 A So one way of thinking about this is that for -- if we
21 compare Firm E for the amount, you know, why Firm E can only
22 test one feature, one product change, Google AdX can test
23 15. In the amount of time that Firm H can test 30 of these
24 product exchanges, Google AdX -- sorry, can test one of
25 these product exchanges, Google AdX can test 30 of them, 30

Direct Examination - G. Weintraub

1 of them.

2 So this difference of scale really drives a speed
3 of innovation. Because these rivals are smaller, their
4 ability to experiment quickly gets reduced, their ability to
5 test features, new product exchanges gets much slower. And,
6 therefore, their ability to improve the product gets
7 diminished.

8 Q Now, in the example you've provided here, Google's
9 experimenting with a new product feature to increase its win
10 rate, assuming that experiment is successful and Google is
11 able to increase its win rate, what happens to the example
12 you provided?

13 A Right. If that happens, the next time around, Google
14 will be even larger. So this gap between, you know -- in
15 the speed and the ability to experiment will get even
16 larger.

17 Q You mentioned earlier that transaction volume is
18 important for building and training algorithms. The Court
19 has already heard some testimony about that. Can you just
20 briefly experiment plain why transaction volume is useful in
21 building and training algorithms in ad tech?

22 A Algorithms play a critical role in ad tech. There's
23 algorithms to sell impressions, like reserve price
24 optimization, algorithms to determine which amount of
25 sources to call in the buying side. There's algorithms to

Direct Examination - G. Weintraub

1 determine bits, budget basing and so on. The larger
2 transaction volume a firm has, the more data it's able to
3 collect to do these algorithms. These algorithms are
4 typically changed on historical data. So the larger
5 experiment volume means more data, more historical data that
6 improves the performance of these algorithms.

7 Q And how does an ad tech company go about getting the
8 type of data you're describing to train algorithms?

9 A Well, as the name tells, the transaction data that is
10 collected while, you know, in the course of this firm's
11 running, executing their transactions. So this is not data
12 that can typically be bought from third parties. This is
13 data that the firms collect themselves when selling or
14 buying impressions.

15 Q You also mentioned earlier that transaction volume is
16 important for cost efficiencies. What are cost efficiencies
17 in the context of ad tech?

18 A So at least two important sources of cost. One is the
19 more typical fixed cost. In this case, associated
20 personnel, R&D endeavors. And naturally, the more
21 transaction volume a firm has, they're better able to cover
22 this fixed cost.

23 Now, more specifically in ad tech, there's another
24 important cost which I will refer to processing costs, which
25 is incurred whenever a firm needs to sell or for that matter

Direct Examination - G. Weintraub

1 buy an impression. So think of compute costs to be able to
2 run the transaction. So that is paid for every opportunity.

3 But the firm only makes money if it wins the
4 impression. So the larger transaction volume -- in this
5 case, in terms of impressions -- the better able the firm
6 will be able to cover this processing costs as well.

7 So putting all of this together, the larger
8 transaction volume, the firm will be more cost efficient and
9 potentially will have more resources to innovate and invest
10 in things like product quality.

11 Q Professor Weintraub, what effects on product quality,
12 if any, come with an increase in transaction volume?

13 A So as I was just explaining, transaction volume
14 increases product quality because of experiments,
15 algorithms, cost efficiencies. Now, as product quality
16 increases, one, it's likely that transaction volume will in
17 turn increase. There will be a -- it's likely that as
18 product quality increases, transaction volume will also
19 increase. It's likely that there will be more impressions,
20 more ad spend. So there's also a feedback loop between
21 transaction volume and product quality.

22 Q What connection, if any, is there between the feedback
23 loop you just described between transaction volume and
24 product quality and what you earlier described in terms of
25 the feedback loop between thickness and product quality?

Direct Examination - G. Weintraub

1 A So if we step back, we can complete this circle, this
2 complete loop. So transaction volume increases product
3 quality because of the dimensions I mentioned. As product
4 quality increases, that makes a platform more attractive for
5 publishers and advertisers. It's likely to attract more of
6 them, so thickness increase. And as thickness increases, as
7 I was explaining before, transaction volume increases. So
8 there's a feedback loop associated to thickness transaction
9 volume and ad product quality.

10 Q Let's turn now to what you did to form the opinions
11 you've reached in this case. To analyze the effects of
12 Google's conduct, what kind of evidence did you look at?

13 A I reviewed documents. I reviewed testimony from
14 industry participants, relevant academic literature. I also
15 performed my own analysis based on different sources of
16 data.

17 Q You mentioned data just then. What kind of data did
18 you look at as part of your work on this case?

19 A So, first, I used Google's own experimental results. I
20 was just talking about experiments. Google runs a lot of
21 experiments, and I had access to the experimental results of
22 these experiments run by Google.

23 I also used monthly data impressions and ad spend.
24 So similar to the figure where I show the difference in
25 scale between AdX and rivals, so both from Google and from

Direct Examination - G. Weintraub

1 rivals.

2 And lastly, for one month, for June 2023, I had
3 more data, auction level data that for a given auction, it
4 will describe the number of bidders, the bids, who won, and
5 so on.

6 Q Now, the first data source you mentioned was Google's
7 experimental results. Which experimental results did you
8 look at?

9 A I reviewed around 50 experimental results associated to
10 the conduct that I studied.

11 Q If you look at the next slide, Professor Weintraub, can
12 you describe to the Court what's shown on this slide?

13 A So this is actually an example of an experimental
14 result and how Google reports these experimental results.
15 In particular, this is an experiment about last look. It's
16 in a slide deck. And what is being reported here is the
17 different roles or different cuts of the traffic. The
18 different columns are different metrics, such as
19 impressions, revenue, Google profit. So this is an example
20 of an experimental result that I used.

21 Q Now, Professor Weintraub, based on your review of
22 Google's experimental results, what geographic area does
23 Google typically study when assessing the impact of product
24 changes?

25 A So in around 50 experimental results that I reviewed

Direct Examination - G. Weintraub

1 associated to the conducts that I studied, in all of them,
2 the results were reported worldwide. So the results were
3 not cut country by country. They were reported worldwide.
4 And so these conducts are actually deployed worldwide,
5 actually deployed in all the countries that Google operates.
6 So I think it makes sense to report these results worldwide.

7 Q And just to be clear, how many of the experimental
8 results that you reviewed reported impact on some kind of
9 U.S. market?

10 A Zero.

11 Q Let's turn now to the opinions you reached about
12 particular actions taken by Google. What conclusions did
13 you reach as to the effect of Google's conduct on the rival
14 scale?

15 A I concluded that Google's conduct decreased rival scale
16 and, therefore, diminished rival's ability to compete.

17 Q And which of Google's conduct specifically did you form
18 your opinion about?

19 A So I started first look and last look, sell-side DRS --
20 that's an enhancement of last look -- Unified Pricing Rules,
21 also called UPR, project Poirot, and two exclusivities that
22 Google imposed.

23 Q Okay. Let's discuss each of those in turn starting
24 with first look. Very briefly, what was first look?

25 A First look was a feature incremented by Google by which

Direct Examination - G. Weintraub

1 AdX was first in the waterfall. So AdX had the chance to be
2 first competing with real-time bids in the waterfall, and
3 rival exchanges only had the chance to see the impression,
4 to sell the impression only if AdX did not sell it.

5 Q How did you go about estimating the impact of Google's
6 first look conduct on rival scale?

7 A Since I was discussing experimental results for first
8 look, I did not find an experiment that Google run to
9 estimate the impact of first look. So instead, I build a
10 simulation model, what is a simulation model is a set of
11 mathematical equations that describe how first look works,
12 and then I calibrated that model with Google's data.

13 Q And what were the results of your simulation model,
14 Professor Weintraub?

15 A So the model has Google AdX, a rival, and then you can
16 think of the rest of the waterfall. In the left-hand side
17 of this picture, there's a scenario that I called
18 head-to-head competition. It is a scenario where the rival
19 and AdX compete in a level playing field, in a fair option.
20 And naturally, from the impressions they win, they split
21 them 50/50. So share of impressions won from the
22 impressions they collectively win are split 50/50 between
23 Google AdX and the rival.

24 Now, on the right-hand side is the first look
25 scenario where AdX has the first look. And in that moving

Direct Examination - G. Weintraub

1 from the fair competition to the first look, the rival
2 shares of impressions, one, decreased by 24.6 percent
3 according to my model.

4 Q Now, why does your simulation predict that even with a
5 first look advantage, AdX only wins 44.6 percent of
6 impressions?

7 A So given that AdX is first -- you know, one good thing
8 that AdX is -- wins every impression, but that's not
9 profitable for AdX. There are floors that are imposed, and
10 some bids will not clear those floors. The floors are used
11 to monetize these impressions to increase publisher's
12 revenue. So it's not profitable for AdX to win every
13 impression even if they're first.

14 Q Let's talk about the impact of first look on customers.
15 In your opinion, what effect, if any, did first look have on
16 publisher and advertiser customers?

17 MR. ISAACSON: I'm going to object. I'm not aware
18 of -- maybe you can show me in his report where he's
19 discussed customers.

20 (Counsel confer.)

21 MR. ISAACSON: Thank you for clarifying.

22 No objection.

23 THE COURT: No objection?

24 MR. ISAACSON: No objection.

25

Direct Examination - G. Weintraub

1 BY MR. TESLICKO

2 Q Professor Weintraub, can you explain to the Court what
3 are your opinions as to the impact of first look on
4 publisher customers?

5 A So relative to the head -- the two-head scenario,
6 because in first look -- because AdX has the first look
7 priority, there may be a competitive bid in the other
8 exchange that doesn't have the chance to win or to be
9 competitive with Google. And for that reason, first look
10 decreases publisher's revenues relative to the head-to-head
11 scenario.

12 Now, for the same reason, because there may be a
13 higher bid in the rival exchange that doesn't win because of
14 first look priority, the match quality between advertisers
15 and impressions gets reduced under first look.

16 Q The next conduct you mentioned, Professor Weintraub,
17 was last look. Briefly, what was last look?

18 A So last look is another feature implemented by Google
19 in which rivals run their auction, the header bid auction.
20 They will send the clearing price of that auction to DFP,
21 Google's AdServer, that will act as a floor for the AdX
22 auction. And the AdX auction will run after having access,
23 after having visibility over the clearing price. So that's
24 why it's called the last look advantage. Now, AdX is going
25 last and has the advantage of having visibility over the

Direct Examination - G. Weintraub

1 clearing price of rivals.

2 Q And in your opinion, what was the effect of last look
3 on Google's rivals?

4 A So to estimate the impact of last look on Google's
5 rivals, I used Google's own experimental data. And these
6 are the results that I obtained according to what I call my
7 substitution for rival exchanges analysis. Last look
8 operated for several years, but to illustrate the results in
9 a more concrete way, I will just present effects. And my
10 estimates are that last look decreased the number of
11 impressions of rivals, again, in yearly terms, by 492.4
12 billion, and in terms of ad spend, by \$473 million. In
13 impressions, this corresponds to a reduction of
14 14.25 percent, and in ad spend, it corresponds to a
15 reduction of 8.72 percent.

16 Q Now, just to help the Court put in context these big
17 numbers, can you provide some kind of context to explain
18 them?

19 A So if -- so one way of doing this is thinking about the
20 average yearly growth rate of rivals between 2019 and 2022.
21 That rate, the average yearly growth of rival, was around
22 9 percent. So what this result is showing is that the
23 impact of a single conduct, in this case last look -- and
24 this is all in terms of ad spend -- is equivalent to the
25 average yearly growth rate of rivals.

Direct Examination - G. Weintraub

1 Q And what is the benefit to Google of when an additional
2 500 billion impressions approximately from a conduct like
3 last look?

4 A Well, this increases -- this will increase -- have
5 increased Google's scale in terms of transaction volume.
6 So, as I was discussing before, this will enhance their
7 ability to experiment, run algorithms, be more cost
8 efficient.

9 Q Now, you mentioned your estimates of last look came
10 from Google's experimental results. How did you get
11 comfortable relying upon Google's experimental results?

12 A So I reviewed evidence showing that Google run traffic
13 when run experiments. That's the gold standard of
14 experimentation. Google reports its results in a
15 statistically rigorous way, and I also reviewed evidence
16 showing how Google uses these experimental results to make
17 important business decisions themselves, to make business
18 decisions themselves. So I assume that Google themselves
19 trusted these experimental results.

20 Q Now, you mentioned you used a substitution from rival
21 exchanges method of estimating the impact on rivals. Can
22 you explain to the Court what that is?

23 A So generally speaking, Google -- when AdX runs
24 experiments, they report results on AdX. So I needed to
25 translate the impact on AdX to an impact on rivals. So this

Direct Examination - G. Weintraub

1 approach, the substitution from rival exchanges approach,
2 assumes that an impression won by AdX corresponds to an
3 impression lost by a rival. So I assume that there's a
4 one-to-one mapping between AdX and rival's losses. So I
5 think that's a good approximation for some conduct, such as
6 last look.

7 Q And just briefly, why do you think the substitution
8 from rival exchanges method is a good approximation of the
9 impact on rivals, of something like last look?

10 A So when one examines the dynamics of last look, last
11 look is really about moving impressions from rivals to AdX.
12 So for that reason, I think this one-to-one mapping is a
13 good approximation to estimate the impact of this conduct on
14 rival scale.

15 Q And outside of its impact on rivals specifically, what
16 is your opinion as to the effect, if any, of last look on
17 match quality?

18 A So given the last look advantage, it can be the case
19 that a higher value bid in a rival does not win. So
20 relative to a scenario where there's head-to-head
21 competition between rivals and AdX, I think last look
22 decreases the match quality between advertisers and ad
23 impressions.

24 Q The next conduct you mentioned, Professor Weintraub,
25 was sell-side dynamic revenue share or SSDRS. Briefly, what

Direct Examination - G. Weintraub

1 was SSDRS?

2 A SSDRS was implemented by Google leveraging the last
3 look advantage, and having visibility of the clearing price,
4 it will change the fee dynamically to increase a win rate.
5 So for competitive auctions, it will decrease the fee. For
6 less competitive auctions, it will increase the fee to
7 increase the wins, the impressions won, and keeping the
8 20 percent fee of AdX on average.

9 Q And in your opinion, what was the effect of sell-side
10 dynamic revenue share on Google's rivals?

11 A So for this, I also used Google's experimental data.
12 My focus on sell-side DRS is an enhancement of last look.
13 The experiments that I reviewed provides an estimate over --
14 about the overall effect of sell-side DRS. And according to
15 my substitution from rival exchanges approach, again, in
16 terms of an annual effect, there's a reduction in rival
17 scale of 81.7 billion impressions, which corresponds to
18 2.39 percent and a reduction in terms of ad spend of 100
19 roughly and 62 billion dollars that corresponds to
20 2.74 percent.

21 Q And because we're talking about, you know, large
22 numbers again, can you put these numbers in context?

23 A So these numbers represent an overall impact of rivals.
24 But just to put numbers in context, I will single out two
25 exchanges. Equativ (phonetic) in 2019 had an ad spend of

Direct Examination - G. Weintraub

1 around \$170 million in that year. So what this estimate is
2 showing is that the reduction in ad spend would, roughly,
3 erase these two exchanges on that year.

4 Q And what opinion did you form as to the effect of
5 sell-side DRS on match quality?

6 A So sell-side DRS is an enhancement of last look. It
7 further reduces match quality between advertisers and ad
8 impressions.

9 Q Let's turn to the next conduct you identified,
10 Professor Weintraub, which was Unified Pricing Rules or UPR.
11 What was UPR, again, briefly?

12 A So publishers are used to set differential floors
13 across exchanges and buying sources. Because of different
14 business reasons, UPR imposes a restriction on publishers
15 removing that freedom, and the restriction was that they
16 needed to have the same -- the same floor, price floor
17 across exchanges and buying sources.

18 Q What was the effect of the Unified Pricing Rules on
19 rivals?

20 A So, again, using Google's experimental data and
21 according to my substitution from rival exchanges approach,
22 the estimates are a reduction in impressions in terms of
23 annual effects of, roughly, 367 billion, which corresponds
24 to 7.95 percent and in terms of ad spend of, roughly,
25 221 million that corresponds to 2.75 percent.

Direct Examination - G. Weintraub

1 Q And what effect, if any, did UPR have on publishers?

2 A So publishers use the freedom they had, the choice they
3 had, to set differential floors. I reviewed evidence
4 stating that they did that because of different business
5 reasons, such as diversifying demand. Once that figure was
6 removed, they have one less lever. So I think UPR hurt
7 publishers.

8 Q Besides your substitution from rival exchanges
9 methodology that you've already explained to the Court, did
10 you use any other method to estimate the impact of Google's
11 conduct on rivals?

12 A Yes. So I had mentioned that the substitution from
13 rival exchanges approach assumes a one-to-one mapping
14 between AdX's wins and rivals' losses. And that, I think,
15 is a good approximation for some conduct, such as last look,
16 but may not be an accurate approximation for other conducts.
17 For example, such as UPR.

18 So to address those cases, I introduce an
19 alternative approach that provides a conservative estimate
20 on the impact on rival scale.

21 Q And what was that alternative methodology called?

22 A So that uses -- it's called the auction level data --
23 the auction level data or the TAM June 2023 data approach.
24 And that approach uses, as the name says, the auction level
25 data from June 2023. The data is less than ideal because

Direct Examination - G. Weintraub

1 sometimes it's hard to identify rivals. The data is from
2 June 2023, as I said, which is after all the conducts have
3 occurred. So to use that data, you need to make several
4 assumptions. And in every turn, I made conservative
5 assumptions, assumptions that underestimated the impact on
6 rival scale. So that's why I mentioned that that approach
7 provides conservative estimate on the impact on rival scale.

8 Q Now, did you use that alternative approach to estimate
9 the effect of Google's conduct on rivals?

10 A I did. And according to that approach, if you take the
11 substitution from rival exchanges approach, the auction
12 level approach estimates a number that in terms of
13 impressions are a value that is 14 percent of the values
14 from substitution from rival exchanges and 19 percent in
15 terms of ad spend.

16 Q Let's turn now to the next conduct you mentioned, which
17 was project Poirot. We don't need to spend a lot of time on
18 it, but briefly, what was Project Poirot?

19 A Project Poirot was implemented by DV360, Google's
20 demand-side platform in which it reduced its shaded bids
21 into rival exchanges --

22 (Reporter clarification.)

23 A Reduced bids into rival exchanges -- according to the
24 AdX, into rival exchanges when it suspected that rival
25 exchanges were not running a second-price auction.

Direct Examination - G. Weintraub

1 Q And what was the effect, if any, of Project Poirot on
2 rival exchanges?

3 A So, again, I'm using Google's experiments to estimate
4 the impact on rival scale in terms of annual effect on
5 impressions and ad spend. There are two versions of Poirot.
6 I'm showing the results here for two versions of Poirot,
7 Version 1, which is the left column, Version 2, which is the
8 right column. The effects of Version 2 are on top, are
9 estimated on top of the effects of Version 1.

10 Q And did you need to use your substitution from rival
11 exchanges or the auction level methodology for estimating
12 the effects here?

13 A So there's two methods I discussed -- I used to go from
14 effects on Google, which is what typically Google estimates
15 the effects on rivals. For this conduct run by DV360, the
16 effects on rivals were directly estimated by Google. So I
17 didn't need to use those other two approaches.

18 Q Professor Weintraub, looking at the next figure, can
19 you explain to the Court what this figure is showing?

20 A So this figure is showing over a period of time from
21 2016 to the end of 2019 the ad spend by DV360 on Google AdX
22 and on nonGoogle exchanges. So the top line, the redline or
23 orange is the spend on Google AdX. The bottom line, the
24 dark line, is the spend on nonGoogle exchanges. There are
25 two dotted lines which represent the launch, the

Direct Examination - G. Weintraub

1 introduction of Poirot Version 1 and Poirot Version 2.

2 What this graph is showing is the important
3 divergence that happened in spend after Poirot Version 2 in
4 particular was introduced between the spend on Google AdX
5 and nonGoogle exchanges by DV360.

6 Q Now, as part of your work in this case, Professor
7 Weintraub, did you form an opinion about whether Project
8 Poirot benefited publisher or advertiser customers as a
9 whole?

10 A So based on the evidence I reviewed, when thinking
11 about the totality of publishers or advertisers, I didn't
12 reach an opinion whether Poirot benefited them or didn't one
13 way or the other. I didn't reach a conclusion on whether
14 Poirot benefited the totality of publishers or advertisers
15 or if they didn't benefit them one way or the other.

16 Q Professor Weintraub, if you could, pick up the small
17 binder in front of you and take a look at what's behind PTX
18 1035.

19 THE COURT: Is there any objection to 1035, or is
20 that already in?

21 MR. ISAACSON: No objection, Your Honor.

22 THE COURT: All right. It's in.

23 BY MR. TESLICKO

24 Q And can you just explain to the Court what is 1035
25 generally?

Direct Examination - G. Weintraub

1 A So this is an example of the experimental results I
2 relied on from Google's experimental results from Google I
3 relied on.

4 MR. TESLICKO: Your Honor, at this time, we would
5 also move in a number of similar documents that Professor
6 Weintraub relied upon. We conferred with Google last night,
7 and they have no objection. I can read those document
8 numbers to the Court right now if it would be convenient.

9 THE COURT: All right. Go ahead.

10 MR. TESLICKO: Those are PTX 432, PTX 518, PTX
11 860, PTX 1035, DTX 312, and DTX 1126.

12 THE COURT: Again, that's six exhibits?

13 MR. ISAACSON: That's correct. No objection.

14 THE COURT: All right. They're in.

15 MR. TESLICKO: And these are all in the binder for
16 the Court's convenience. They are also Google documents
17 that Professor Weintraub relied upon for the estimates
18 provided today.

19 BY MR. TESLICKO

20 Q Professor Weintraub, I want to turn to the next piece
21 of conduct you mentioned and the last one on your list,
22 which was exclusivities. Which exclusivities did you study
23 as part of your work on this case?

24 A I cited two exclusivities. First, the Google Ads'
25 exclusivity into AdX. So the demand coming from search

Direct Examination - G. Weintraub

1 aggregated by Google Ads that essentially could only buy
2 impressions through AdX, not through rival exchanges because
3 of the exclusivity. And then also the exclusivity of DFP,
4 Google's ad server, into AdX. For publishers to be able to
5 obtain real-time bids from AdX, they needed to work with
6 DFP.

7 Q Focusing on the Google Ads AdX exclusivity, what
8 opinion did you reach about the effect, if any, of that
9 exclusivity on Google's rivals?

10 A So first, AdX's exclusivity reduces thickness on the
11 buying side for rivals. There's all these advertisers that
12 are essentially just buying in Google Ads. So that reduces
13 the thickness on rivals, and that reduction on thickness
14 also implies a reduction in transaction volume, which is
15 what I quantified.

16 Q And how did you go about quantifying the effect of the
17 Google Ads AdX exclusivity?

18 A So for this exclusivity, I didn't have the type of
19 experimental data that I relied on for the other conduct.
20 So instead, I did the following quantification in terms of
21 share of impressions of one. And I asked the following
22 question. So Google Ads is nearly exclusive, and I asked
23 what would have happened if instead of Google Ads being
24 nearly exclusive, it would have behaved like DV360, Google's
25 demand-side platform, that is not exclusive, that bids into

Direct Examination - G. Weintraub

1 other rival exchanges?

2 And based on that comparison, the results are
3 shown here. Without the Google Ads' restriction, this is
4 the split between Google AdX and rival exchanges. And with
5 the Google Ads restriction, there is decrease in rival
6 exchanges' share of impressions, one of 25.4 percent driven
7 by the Google Ads exclusivity.

8 Q Now, Professor Weintraub, over the course of your
9 testimony today, you've discussed estimates of the annual
10 impact of individual actions by Google. Taking a step back,
11 what is your opinion about the long-term impact of Google's
12 conduct?

13 A So I showed that estimate -- now, this conduct were not
14 the effect of just one year. They were the effect for
15 multiple years. So the effects accumulate over these years.
16 So let's take UPR. It has been present since 2019. The
17 annual impact is around, if I remember correctly, 370
18 billion impressions. So that annual impact, if UPR has been
19 around for several years, gets accumulated over these years.

20 Then furthermore, because of the feedback loops
21 that I discussed, this -- it may not be enough just to sum
22 the annual impacts because these effects may get amplified
23 year over year.

24 Q And you've also covered today a number of different
25 conducts, many of which overlapped over time. Do you have

Direct Examination - G. Weintraub

1 an opinion about the accumulative impact of Google's conduct
2 as a whole?

3 A So the conducts -- again, it's not just one. It's an
4 accumulation of conducts. So the effects get accumulated.
5 And again, because of the feedback loops I've been
6 discussing, it may not be enough just to sum the effects.
7 The effects make it -- get amplified.

8 Q And what is your opinion, Professor Weintraub, about
9 the overall impact, if any, on Google's rivals' ability to
10 compete?

11 A So I estimated and explain how Google's conducts reduce
12 transaction volume in terms of impressions, in terms of ad
13 spend. That reduction of transaction volume reduces rivals'
14 ability to run experiments, to run algorithms, to be cost
15 efficient. And there's plenty of evidence from industry
16 participants that this was the case. They would have been
17 better able to do all of these things. And because of this,
18 the quality of their products gets degraded. So lower
19 transaction volume for rivals imply that the quality of the
20 products get degraded.

21 Now, as the quality of the products gets degraded,
22 these platforms are less attractive for customers. So the
23 thickness, the number of publishers and advertisers is
24 likely to decrease. And as that happens, that is likely to
25 further decrease transaction volume.

Direct Examination - G. Weintraub

1 Q And now, how, if at all, does the degradation of rival
2 products' quality that you just describe compare to any
3 product quality benefits that Google may have obtained by
4 getting additional share through the conduct?

5 A So I showed at the beginning how, you know, AdX is many
6 times larger than rivals. So now let's think of -- you
7 know, let's suggest I make it concrete and impressions that
8 are moved from rivals to AdX. There's a concept that is
9 prevalent in all of these dimensions of scale, which is
10 referred to decreasing returns to scale, which tells us that
11 the reduction in product quality by removing a million
12 impressions from the rival is going to be larger than the
13 benefit that Google would get by receiving those same
14 million impressions. And that's I'll refer to a decrease in
15 returns to scale.

16 Q And what do all of these feedback loops on your slide
17 mean in terms of conduct that may no longer be in effect
18 today?

19 A So conducts in the past reduced rival scale.

20 MR. ISAACSON: I'm going to object. I am not
21 aware of this being in his report.

22 THE COURT: Mr. Isaacson, I couldn't hear you.

23 MR. ISAACSON: I'm not aware of this being in the
24 report.

25 MR. TESLICKO: Your Honor, throughout the report,

Direct Examination - G. Weintraub

1 Professor Weintraub explains the feedback loops, and he's
2 just explaining how the feedback loops apply to the conduct
3 in a cumulative manner.

4 THE COURT: I'll sustain the objection.

5 BY MR. TESLICKO

6 Q Okay. Focusing on the long-term impact of Google's
7 conduct as a whole, how did Google's conduct impact match
8 quality, product's quality for customers?

9 A So Google's conduct reduced rival scale by virtue of
10 this reduction that makes it harder for rivals to improve
11 their products, to invest in product quality improvements.
12 The reduction of thickness reduces much quality. So once we
13 take all of this together, I think ultimately the conducts
14 hurt both publishers and advertisers in the long-run.

15

16 MR. TESLICKO: Thank you, Your Honor. We pass the
17 witness.

18 THE COURT: All right. Do you have an exhibit
19 book, Mr. Isaacson, or not?

20 MR. ISAACSON: Yes, Your Honor. My colleague will
21 introduce them.

22 THE COURT: Are you ready, Mr. Isaacson?

23 MR. ISAACSON: Yes, Your Honor. I would like to
24 introduce to you my colleague, Anita Liu, who has joined us
25 at counsel table for this witness.

Cross-Examination - G. Weintraub

1 THE COURT: Good afternoon.

2 CROSS-EXAMINATION

3 BY MR. ISAACSON

4 Q Professor, I'm Bill Isaacson. I'll be asking you
5 questions today.

6 A Sounds good.

7 Q Just a few simple things to begin with. You are not
8 putting forth an opinion about what the relevant market
9 would be in this case, correct?

10 A I am not, correct.

11 Q All right. And so you have not -- you are not giving
12 an opinion as to who are actually the rivals of Google?

13 A I am not. I am analyzing -- you know, I showed, you
14 know, in the exchange who are, for example, AdX's rivals.
15 That's in my report, but I'm not opining on market
16 definition.

17 Q Right. For example, if Amazon is a rival of Google for
18 purposes of the appropriate market in this case, you're not
19 giving any opinion about any effect on Amazon?

20 A No.

21 Q You're not giving any opinions on the effect on
22 Facebook?

23 A No.

24 Q You're not giving any opinion on the effect of
25 advertising technology for apps, for display ads on apps?

Cross-Examination - G. Weintraub

1 A I'm not.

2 Q Okay. You have not reached any conclusions about
3 market power in this case; correct?

4 A Correct.

5 Q You are not giving an opinion that Google's conduct has
6 harmed competition, correct?

7 A My opinion is about how Google's conducts diminish
8 rivals' ability to compete, but I haven't opined on the
9 legal term "harm to competition."

10 Q Well, I'm not asking you about a legal term here.
11 You're an economist, right?

12 A I have an expertise in economics.

13 Q Yeah. So you are not giving any opinions in this case
14 about whether there's been an effect on competition; you are
15 only giving opinions about whether there has been an effect
16 on rivals?

17 A Correct. On rivals' ability to compete, correct.

18 Q And you are also not expressing any opinion on the
19 quality of Google's products?

20 A I'm -- correct.

21 Q And so, for example, when you said I think -- probably
22 several times -- that product quality will enhance the size
23 and scale of a firm, you're not giving any -- you're not
24 giving any opinions about how successful Google was with
25 quality products and how much scale resulted because of

Cross-Examination - G. Weintraub

1 that?

2 A So part of my opinion is that Google's conducts
3 increased their scale to the expense of their rivals.

4 Q I'm not asking you about Google's conduct. I am asking
5 you about Google's product quality. You are not giving
6 opinions in this case whether Google's product quality had
7 an effect on Google's scale, correct?

8 A Correct.

9 Q All right. You don't know one way or the other whether
10 Google's quality is what has contributed to its successful
11 scale?

12 A Yeah, that was not the focus of my opinion.

13 Q Now, in your report, you describe the specific
14 combination of ad tech products and solutions that can be
15 used by an advertiser or publisher as an ad tech stack,
16 right?

17 A I don't remember the exact words, but that sounds about
18 right.

19 Q And all of the products and solutions within the ad
20 tech stack can be viewed as intermediaries that facilitate
21 advertisers and publishers in the buying and selling of
22 online ads, right?

23 A Are you quoting from --

24 Q I am, but you're a professor, I'm happy to show it to
25 you --

Cross-Examination - G. Weintraub

1 A No. That sounds about right. I don't remember the
2 exact words.

3 Q I'm not worried about the exact words. I want to get
4 it basically right.

5 A Yeah.

6 Q All right. So the products and solutions within the ad
7 tech stack that are facilitating matches between advertisers
8 and publishers include publisher ad servers, right?

9 A Right.

10 Q They include supply-side platforms or ad exchanges,
11 correct?

12 A Correct.

13 Q They include demand-side platforms, DSPs, right?

14 A Right.

15 Q And they include ad networks, correct?

16 A Correct.

17 Q All right. Can we look at Figure 1 of your report?

18 MR. ISAACSON: And I would like to mark this as
19 Weintraub Demonstrative 1. This is from his report. I
20 would ask to put it on the screen.

21 BY MR. ISAACSON

22 Q Do you recall this Figure 1 ad tech products used for
23 open-web display advertising? This is a chart you prepared
24 for your report, correct?

25 A Yes.

Cross-Examination - G. Weintraub

1 Q Okay. And you'll see you have a line down the middle.
2 And on the left, there's the sell-side, and on the right,
3 there's the buy-side?

4 A Right.

5 Q Okay. That's at the bottom there.

6 MR. ISAACSON: Maybe, Matt, sort of highlight
7 that, right.

8 BY MR. ISAACSON

9 Q All right. Now, on the sell-side, you've put the ad
10 exchanges, right?

11 A Right.

12 Q And above that, you put something called a publisher ad
13 network, correct?

14 A Correct.

15 Q That's on the supply side. On the buy-side, you've got
16 the advertiser ad network, correct?

17 A Correct.

18 Q Okay. And then on the buy-side, the way that the
19 advertisers flow -- there's the flow of ad spend, correct?

20 A Yes.

21 Q You see that green arrow?

22 A Yes.

23 Q That's coming from the advertiser, and you have that
24 flow of ad spend going through the advertiser ad server,
25 then through the demand-side platform, and then to the ad

Cross-Examination - G. Weintraub

1 exchange, right?

2 A Sorry. That was a bit too fast for me. Can you repeat
3 that?

4 Q Sure. The way this chart has the ad spend going from
5 the advertiser at the bottom -- first, it goes through the
6 advertiser ad server; do you see that?

7 A Yes.

8 Q Then it goes to the demand-side platform, right?

9 A Yes.

10 Q Then it goes across to the sell-side to the ad
11 exchange, right?

12 A Right.

13 Q Okay. And you also -- oh, by the way, the DSP or the
14 ad network -- so you see the demand-side platform and the ad
15 network over on the buy-side? The ad network is on top, and
16 the demand-side platform is on the bottom?

17 A Yes.

18 Q Both of those compete for impressions on the
19 advertisers' behalf, correct?

20 A Yeah, they would typically compete for impressions in
21 the exchange.

22 Q They compete for impressions in the exchange on behalf
23 of the advertiser?

24 A Correct.

25 Q Now, Figure 2 in your report --

Cross-Examination - G. Weintraub

1 MR. ISAACSON: Which I would ask to be Weintraub
2 Demonstrative 2.

3 BY MR. ISAACSON

4 Q All right. This is, again, from your report, right,
5 sir?

6 A Yes.

7 Q Okay. Now, this is a chart you prepared looking at
8 Google ad tech products for open-web display advertising,
9 correct?

10 A Yes.

11 Q Now, are any of these products in here limited to
12 open-web display advertising?

13 A I'm trying to think. I'm not exactly sure. I know
14 there's -- that some of the products include others -- other
15 forms of traffic. If you ask me about all of them, I am not
16 100 percent sure.

17 Q All right. You don't know of a single one of the
18 Google products that are listed in your Figure 2 that are
19 exclusively open-web advertising, correct?

20 A Correct.

21 Q Right. Actually, I missed that point about
22 Demonstrative 1.

23 MR. ISAACSON: Please flip back, Matt.

24 BY MR. ISAACSON

25 Q This Figure 1, your Demonstrative 1, was also -- was ad

Cross-Examination - G. Weintraub

1 tech products used for open-web display advertising. All of
2 the ad tech in your Figure 1 are also used -- are also not
3 exclusive to open-web display advertising, correct?

4 A I think several of these products -- I know about all
5 of them? Again, I am not 100 percent sure.

6 Q You don't know -- you've listed publisher ad servers,
7 ad exchange, etc., etc., all of these little boxes. You
8 don't know any of these boxes that are exclusive to open-web
9 display advertising, correct?

10 A Correct.

11 Q Now, if we can look at Plaintiff's Demonstrative A --

12 MR. ISAACSON: And just put the Demonstrative A at
13 the top, not a side by side.

14 BY MR. ISAACSON

15 Q All right. This is -- have you seen this chart of ad
16 tech products before?

17 A I believe I have, yes.

18 Q Were you here for opening statement?

19 A Yes. Yeah.

20 Q Okay. This chart does not have the publisher ad
21 networks that you have on the sell-side of your chart,
22 right?

23 A Yeah, I don't see it.

24 Q Okay. And what are publisher ad networks?

25 A That would be the publisher's side of the ad network.

Cross-Examination - G. Weintraub

1 Q Okay. And you have -- this chart has ad exchanges in
2 between the sell-side and the buy-side. You have ad
3 exchanges on the sell-side, correct?

4 A I mean, those -- how the pictures are constructed --
5 you are describing how they are constructed. Yeah, that is
6 how the pictures are built.

7 Q All right. Well, you're the one at Stanford teaching
8 platforms and display advertising. So I want to compare
9 your chart to the chart that was shown in opening and make
10 sure I have it right. All right.

11 On the buy-side of this chart, the advertiser ad
12 networks are on top of the demand-side platform and don't
13 have the flow of ad spend running through the advertiser ad
14 server to the demand-side platform, right?

15 A Sorry. Can you repeat that?

16 Q Sure. Go back to Figure 1. You had something
17 called -- you have advertiser ad servers over on the right
18 going to the demand-side platform, right?

19 A Yes.

20 Q Okay. By the way, what's the advertiser ad server?

21 A That would be the tool that could manage the ads from
22 advertisers.

23 Q All right. And those are not present in -- if you go
24 back to the Demonstrative A, those are not present in that
25 chart, right?

Cross-Examination - G. Weintraub

1 A Right.

2 Q Okay. And you talked about indirect network effects.
3 You do agree that indirect network effects exist -- well,
4 actually, I'll skip that.

5 Can we look at Demonstrative N4. I put page
6 numbers on them.

7 All right. This is a chart plaintiffs showed you
8 as part of their Demonstratives N. It says page 4 in that,
9 so that's why I'm calling it N4.

10 And the firms that are listed there with letters,
11 those are ad exchanges, correct?

12 A Correct.

13 Q Okay. So they don't include any social media or
14 Amazon, correct?

15 A Correct.

16 Q They don't include -- well, is the transaction volume
17 here open-web display?

18 A Correct.

19 Q Okay. So you've excluded from the transaction volume
20 apps, correct?

21 A Correct.

22 Q Connected TV, correct?

23 A Correct.

24 Q Native ads, correct?

25 A Yes.

Cross-Examination - G. Weintraub

1 Q And Firms B through K may transact in all of that
2 volume, for example, for apps, but you have not charted that
3 here?

4 A So -- yeah, this transaction volume is open web.

5 Q Okay. Can we look at PTX 1317? This is another chart
6 from your report.

7 MR. ISAACSON: I'd like to move it into evidence.

8 THE COURT: Okay. 1317?

9 MR. ISAACSON: Yes.

10 THE COURT: Well, it's a plaintiff's exhibit.
11 They can't object.

12 MR. TESLICKO: No objection.

13 THE COURT: All right. It's in.

14 BY MR. ISAACSON

15 Q All right. This was another time when you were
16 comparing the amount of data for AdX and other firms, and
17 what this shows is that AdX's monthly advertiser spend for
18 AdX is generally going up from 2015 to 2022 pretty
19 significantly, right?

20 A You said AdX?

21 Q Yes.

22 A Yes.

23 Q All right. Can we look at -- and what this is is the
24 monthly advertiser spend for AdX, correct?

25 A Correct.

Cross-Examination - G. Weintraub

1 Q This is when -- right. But during that same period --
2 and then if we can look at 1316 --

3 THE COURT: Are you moving that in as well?

4 MR. ISAACSON: Yes.

5 THE COURT: Again, it can't be an objection. It's
6 a plaintiff's exhibit. So it's in.

7 MR. TESLICKO: No objection, Your Honor.

8 BY MR. ISAACSON

9 Q Okay. The number of queries are going up from 2015
10 through 2022 on AdX, correct?

11 A Yes.

12 Q Okay. And then I would -- if we can look at 1315 --

13 THE COURT: Are you also moving that in?

14 MR. TESLICKO: No objection, Your Honor.

15 MR. ISAACSON: Okay.

16 THE COURT: Do you want that in as well?

17 MR. ISAACSON: Yes.

18 THE COURT: Okay. It's in.

19 BY MR. ISAACSON

20 Q During that same time period when queries are going up,
21 transactions are going up, the win rate for bids by AdX is
22 going down sharply, close to 50 percent to 20 percent from
23 2015 to 2022, right?

24 A Right. So the impressions are going up. Queries are
25 going up faster than impressions. So the win rate is --

Cross-Examination - G. Weintraub

1 Q Right. The volume --

2 A Excuse me?

3 Q The volume, the amount of transactions on AdX are going
4 up, up, up, and the win rate for AdX is going down, down,
5 down from 50 percent to 20 percent? That's what you
6 observed, right?

7 A Right. The impressions -- the amount of impressions is
8 going up, but the win rate is going down. That's what this
9 is showing.

10 Q At risk of a slightly long question --

11 MR. ISAACSON: I have to have a premise for this
12 question, Your Honor.

13 BY MR. ISAACSON

14 Q If you define the concept of minimum viable scale as
15 the scale sufficient for a firm to operate profitably in a
16 medium to long term -- are you with me so far?

17 A Yes.

18 Q If you define a viable scale that way, you have not
19 conducted an analysis of whether Google's rivals have been
20 able to achieve minimum viable scale, correct?

21 A My opinion is about like the range of scale. It wasn't
22 about a single number, which I think is what you're
23 referring to with minimum viable scale.

24 Q Is the answer I am correct?

25 A You're correct.

Cross-Examination - G. Weintraub

1 Q All right. Now, let's talk about the analysis that
2 you've done. If we can look at -- well, if we can look at
3 PTX 1333, which has been admitted into evidence, you showed
4 the Court various calculations of scale taken away from
5 rivals. This is Table 8, a summary from your report, of
6 those on an impression basis, and the highest number taken
7 from rivals is 492.4 billion from last look, correct?

8 A Right, in terms of a yearly effect.

9 Q Right. Just the largest number on an impression basis
10 is 492 billion on an annual basis?

11 A Yes.

12 Q Okay. In your binder --

13 MR. ISAACSON: And please don't put this on the
14 screen.

15 BY MR. ISAACSON

16 Q -- is DTX 2526.

17 MR. ISAACSON: Your Honor, these are two footnotes
18 from his report.

19 THE COURT: Okay.

20 MR. ISAACSON: Ordinarily I would read them to him
21 and have him to go over it, but these are reporting
22 information from other companies that they may consider
23 confidential.

24 THE COURT: All right. So I'm sorry. These are
25 defendant's exhibits?

Cross-Examination - G. Weintraub

1 MR. ISAACSON: This is -- I've marked it as a new
2 exhibit. This is not previously --

3 THE COURT: Oh, okay.

4 MR. ISAACSON: I am doing this for convenience.
5 Normally, I would have just read this into the record.

6 THE COURT: All right.

7 THE WITNESS: Excuse me. Can you repeat the
8 number?

9 BY MR. ISAACSON

10 Q 2526, DTX. You will see on that document two footnotes
11 from your report. Are you with me, sir?

12 A Yes.

13 Q Now, in those footnotes in your report, you reported on
14 certain scale information from other exchanges, which please
15 don't say them by name. Am I correctly summarizing that's
16 what you've done here and you recognize those as footnotes
17 from your report?

18 A Yes, I think these are footnotes from my report.

19 MR. ISAACSON: Right. So for convenience, I would
20 like to move DTX 2526 into evidence under seal. We can
21 consult with these companies if this needs to be kept under
22 seal. But that way the Court will have it and we don't need
23 to discuss the numbers on the record of the companies.

24 THE COURT: All right. Is there any objection to
25 proceeding that way?

Cross-Examination - G. Weintraub

1 MR. TESLICKO: Yes, we object to this as a new
2 exhibit.

3 THE COURT: I'm sorry?

4 MR. TESLICKO: I'm sorry. My apologies, Your
5 Honor.

6 We have no objection as long as it applies to both
7 sides, that we could use new exhibits in cross.

8 THE COURT: Well, it can't be a new exhibit. It's
9 a footnote to the expert's report. You have the expert's
10 report, right?

11 MR. TESLICKO: The expert report is not on the
12 exhibits list. So this is a new exhibit. As long as it
13 applies to both sides, Your Honor, we have no objection.

14 MR. ISAACSON: Your Honor, this is a very specific
15 thing. The reason this is a new exhibit is so I don't have
16 to read these things out into open court. Otherwise, I
17 would not put footnotes from an expert report into the
18 exhibit list.

19 THE COURT: All right. I'm going to let it in,
20 but it is not necessarily opening the door to wholesale
21 additional exhibits unless we have the same problem of the
22 matter being under seal but we need to get it into the
23 record. All right.

24 MR. TESLICKO: Understood, Your Honor.
25

Cross-Examination - G. Weintraub

1 BY MR. ISAACSON

2 Q Okay. Looking at those footnotes, you can see that
3 there are companies' exchanges in this industry which have
4 tens of trillions of impressions per month, right?

5 A I don't see the number.

6 Q You see trillions? Do you see numbers?

7 A But it's bids. That's different than impressions.

8 THE COURT: I'm sorry. It's what?

9 MR. ISAACSON: Bids.

10 THE WITNESS: Bids.

11 BY MR. ISAACSON

12 Q So there are companies with tens of trillions of
13 information about bids, correct?

14 A I mean, that's a number here. I also don't know
15 exactly what -- without looking at the details, what exactly
16 this contains.

17 Q All right. You don't actually -- I'll let the rest of
18 that speak for itself.

19 If we can look at N8, the calendar. Now, here you
20 were -- Firm E and Firm H were two real companies, and you
21 were comparing their 15 days and 30 days to what Google
22 would do in a day. Do you remember this exhibit?

23 A Yes.

24 Q Okay. And the -- what Google did in a day are some
25 experiments that Google ran; is that right?

Cross-Examination - G. Weintraub

1 A So this is a single experiment.

2 Q All right. So one experiment that Google ran. Do you
3 know what the experiment was?

4 A So this is an illustration of --

5 Q That's not my question. You said you used one actually
6 Google experiment. Do you know what the Google experiment
7 was?

8 A I don't think I said that.

9 Q I thought you just said that. So maybe I'm wrong.
10 Let's go over it.

11 Google did something in one day. Was that one
12 experiment?

13 A Let me try to explain, if I may. So this is an
14 illustration of an experiment -- a typical experiment that
15 Google would run. I'm using their data. So to find
16 statistically rigorous results, you need to run the
17 experiment for certain amount of time. So I'm using
18 Google's data, actual data --

19 THE COURT: I'm not sure you're answering the
20 question. As I understand, the question is did you actually
21 see a specific Google experiment that was done in one day,
22 or is this sort of extrapolating from other types of data to
23 come to that one day?

24 THE WITNESS: So I reviewed many Google
25 experiments. Some are one day; some are a few days. Some

Cross-Examination - G. Weintraub

1 are -- typically, they would range from one day to two weeks
2 typically.

3 BY MR. ISAACSON

4 Q Was this one-day experiment that's on this calendar an
5 experiment that Google actually ran?

6 A This is not an experiment that Google actually ran.
7 This is based on the data -- on the experimental data that I
8 reviewed from Google, but it's not an experiment that Google
9 actually ran.

10 Q It's based on experimental that Google had, but you
11 didn't use an actual Google experiment. Is that what you're
12 saying?

13 A Correct, and the reason is --

14 Q I did didn't ask you the reason, sir. I'll let you
15 explain that with your counsel.

16 THE COURT: Well, as long as we're talking about
17 experiments, did I understand correctly that you indicated
18 that you looked at about 50 experimental results. Is that
19 correct?

20 THE WITNESS: So 50 experimental results
21 associated to the conducts that I studied. So there's --

22 THE COURT: But this was done on a worldwide
23 basis?

24 THE WITNESS: Yeah. So the 50 experimental
25 results associated with the conducts that I studied, they

Cross-Examination - G. Weintraub

1 are all worldwide.

2 THE COURT: Did you look at any studies that were
3 just done on U.S.?

4 THE WITNESS: I didn't. I didn't find any.

5 BY MR. ISAACSON

6 Q All right. Can we look at N19? This is your benchmark
7 analysis, sir. All right. And you used DV360 as a
8 benchmark, and you estimated the amount that Google Ads
9 would purchase on rival ad exchanges based on DV360's
10 spending on rival ad exchanges, right?

11 A Right.

12 Q So you're saying, okay, if we made Google Ads the same
13 amount of spending at a percentage basis as DV360, that's
14 your benchmark?

15 A Correct.

16 Q Okay. And you used that benchmark because DV360 demand
17 is accessible to rival exchanges, correct?

18 A Yes.

19 Q Okay. And you found that the share of impressions to
20 rival exchanges for Google Ads has ranged from 6.6 percent
21 to 11 percent between -- in the last -- in the five years
22 from 2017 to 2022, right?

23 A And that's referring to AWBid? That's what you're
24 referring to?

25 Q Those are the numbers you found?

Cross-Examination - G. Weintraub

1 A That sounds about right. I don't remember the numbers
2 exactly.

3 Q Okay. Let's just -- I want to lock those in and make
4 sure we've got the right numbers. So let's just quickly
5 look at your report. Paragraph 42C on page 29, and I think
6 counsel gave you a binder of those reports. Oh, it's your
7 rebuttal report. Sorry.

8 All right. This is on the bottom of page 28
9 continuing over to page 29.

10 A And this is the rebuttal report, you said, correct?

11 Q The rebuttal report.

12 All right. So it's just the last word on page 28,
13 between, and then turn to page 29. See the last word?

14 A Yes.

15 Q Okay. Between 2017 and 2022, the share of impressions
16 of rival exchanges has ranged from 6.6 percent to 11 percent
17 in a given year for Google Ads. So I have those numbers
18 right; don't I?

19 A Yes.

20 Q In fact, the 6.6 percent was the number in 2017, and
21 the 11 percent was the number in 2022; wasn't it? It rose
22 from 6.6 percent to 11 percent, correct?

23 A I don't remember.

24 Q I want to confirm this fact. So I am going to bother
25 you to look at your work papers. And if you look at the

Cross-Examination - G. Weintraub

1 third tab from the back of your -- actually, from the last
2 tab in your binder, Google Ad restrictions work paper --

3 A Oh, so the other binder?

4 Q The binder I gave you. Sorry. It's probably the black
5 binder, yeah. Go all the way to the end, and there's a tab
6 that says work paper.

7 A The last one says Demonstrative N, I think.

8 Q You see something called Google Ads restrictions work
9 paper?

10 A Oh, here, yeah.

11 Q Okay. And if you turn to that, there's a summary, and
12 then in the third column, there's a column about
13 impressions. Do you see that?

14 A Yes.

15 Q And do you recognize this work paper showing that in
16 2017, there's the 6.6 percent, and then in 2022, it's
17 10.977 percent rounding to 11 percent?

18 A Yes.

19 Q Okay. Now -- and then if you still have your expert
20 report in front of you, during that same period, the share
21 of impressions for rival exchanges for DV360 rose from
22 29.7 percent to 48.7 percent, correct?

23 A Yes.

24 Q So over those five years, DV360 was increasing the
25 share of impressions to rival exchanges from 29.7 percent of

Cross-Examination - G. Weintraub

1 the impressions in DV360 to just under 50 percent, right?

2 A Yes.

3 Q Okay. And then, because this is a benchmark analysis
4 you compared those two figures, and you found that if Google
5 Ads had contributed to impressions to rival exchanges at the
6 same rate as DV360, Google Ads would have contributed a
7 number of trillion more impressions, right?

8 A I mean, I don't know the exact number, but it would
9 be -- if you compare with or without restrictions, this is
10 the 25.4 percent.

11 Q And to do this analysis, you had data of the total
12 number of impressions that DV360 -- Google's DV360 was
13 contributing to rival exchanges, correct?

14 A Correct.

15 Q And that was from 2018 to 2022. You know that was
16 trillions of impressions, right?

17 A 2017 to 2022, yeah.

18 Q Yeah. Okay.

19 We've calculated as 3.6 trillion impressions
20 during those years. Does that sound right?

21 A Well, I can't work in my head with such big numbers.

22 Q Okay. I'm going to bother you with your work papers
23 again. There is -- so it might be before the tab we were
24 looking at before. There's something called conduct effects
25 from experiments.

Cross-Examination - G. Weintraub

1 A Conduct effects work paper or something else? It says
2 scale input?

3 Q Yeah, sorry. Scale inputs. Hopefully, it's the
4 second-to-last tab in your binder.

5 A Yeah, I have it.

6 Q All right. Inputs into scale effects from experiments.
7 Do you recognize this from your work papers?

8 A I think so.

9 Q All right. And in Row 2 on the first page is worldwide
10 monthly ad impressions won by DV360 and rival exchanges. Do
11 you see that?

12 A Yes.

13 Q Okay. So if you then move forward to the table that's
14 two pages after that and you look at --

15 A I have only one page.

16 Q Maybe one page. I guess my printout is a little
17 different.

18 Yes. It says one of one on it. It says one of
19 one on it. You got that?

20 A Yeah.

21 Q And Row 2, this has numbers from 2018 to 2022 that are
22 monthly billions of impressions from DV360 sent to rival
23 exchanges, right?

24 A Right.

25 Q All right. And so the total number of impressions sent

Cross-Examination - G. Weintraub

1 from 2018 through 2022, you would add up those numbers on an
2 annual basis -- for the total on an annual basis, you would
3 add up those numbers and multiply by 12, right?

4 A Yes.

5 Q Okay. And that would be -- so that's where we are
6 getting our 3.6 trillion. Do you --

7 A I'll trust your math.

8 Q Not always wise, but we did our best.

9 And just while we're on this document, there's
10 also -- you also did a dollars calculation. And if you look
11 at the first page, in the dollar's calculation, you want to
12 look at Row 4, right?

13 A Yeah. All of those would be the ad spend, yes.

14 Q Right. And so then if you flip to Row 4, these numbers
15 are now in the millions. So what you would do on a monthly
16 basis -- so for an annual number, you would add these up and
17 multiply by 12, and you're going to have a number of
18 \$8.3 billion that DV360 was sending to rival exchanges,
19 right?

20 A I think based on these numbers, that sounds about
21 right.

22 Q All right. If we can look at -- now, you looked at --
23 show me the last chart, which was -- let's show M14. All
24 right. I am just doing this as an illustration now. But
25 for this last look analysis, as well as sell-side dynamic

Cross-Examination - G. Weintraub

1 revenue share and UPR, you ran two different types of
2 analyses to quantify the effects of Google's conduct. The
3 first was what you call the substitution from rival
4 exchanges, right?

5 A Right.

6 Q And under that first analysis, you assumed that for
7 every impression won by Google, it was lost to a rival
8 exchange?

9 A Right.

10 Q Google wins it; the others lose it 100 percent of the
11 time is the assumption?

12 A That's the assumption, which I also said is -- I think
13 it's a good approximation for some conduct, such as last
14 look.

15 Q Okay. The second analysis you did, you did not make
16 that assumption. For that, you assumed that some portion of
17 the expenses of -- some gains by AdX would be at the expense
18 of a rival exchange but some would not, right?

19 A Right.

20 Q And that's what you call with a catchy name your GAM
21 2022 and 2023 analysis, right?

22 A Right, and that's what I refer to in my direct as the
23 conservative estimate.

24 Q Right. I think you did mention it in passing. I want
25 to go over this now.

Cross-Examination - G. Weintraub

1 For your second analysis, this GAM analysis, you
2 looked at data from -- it's call GAM June 2023. That means
3 you're looking at data from June 2023?

4 A That's right?

5 Q And you counted as impressions gained by Google at the
6 expense of a rival only those expenses -- only those
7 impressions where AdX won and the second-highest bid was
8 from a nonAdX exchange?

9 A Right.

10 Q And so, for example -- and in each one of the charts
11 you showed the Court with these numbers was the first
12 analysis and not the second?

13 A Right. So the charts I showed are the first analysis,
14 and then I mention that the second analysis is a percent of
15 these numbers, correct.

16 Q You mentioned that there was a second analysis, but you
17 didn't show the Court all the lower numbers from the other
18 analysis, right?

19 A Right, those numbers in my report I didn't show in this
20 presentation.

21 Q So let's show the Court those.

22 MR. ISAACSON: Matt, I didn't warn you about this.
23 Can you get 1326 and 1327 on the same page? This is PTX
24 1326 and 1327, which are their exhibits from his report.

25 And I would move those into evidence.

Cross-Examination - G. Weintraub

1 THE COURT: 1326 and 1327, any objection?

2 MR. TESLICKO: No objection.

3 THE COURT: And those are plaintiffs' numbers?

4 MR. ISAACSON: Yes.

5 THE COURT: Yeah, they're both in.

6 BY MR. ISAACSON

7 Q All right. So Table 1, this is the analysis that --
8 where you assume 100 percent where it helps Google, it hurts
9 the rival, right?

10 A Like, which for last look, I think, it's accurate.

11 Q Right. And so that's where you get --

12 MR. ISAACSON: And you have to go over into the
13 right-hand column, Matt.

14 Q -- negative 14.25 percent on impressions and negative
15 8.72 percent in dollars?

16 A Right.

17 Q And it was those two numbers that said negative
18 14.25 percent and negative 8.72 percent that you showed to
19 the Court in Demonstrative N14, right?

20 A Yes.

21 Q Okay. Now, under Table 2, this is where you assume
22 that there wasn't complete -- that where Google did benefit,
23 it didn't always hurt the rival based on was the rival next
24 in line to win the bid. And let's show the total numbers on
25 the right.

Cross-Examination - G. Weintraub

1 So negative --

2 MR. ISAACSON: Can you get those bigger, Matt?

3 BY MR. ISAACSON

4 Q So instead of negative 14.25 percent, you're at
5 negative 2.25 percent, right?

6 A Yes. As I said, this is a conservative estimate. And
7 for last look, I think the accurate estimate is the
8 left-hand side.

9 Q Your results are raising from 14.25 percent to
10 2.25 percent in your report, and you're showing the Court
11 only the 14.25 percent number, right? That's what you did
12 today?

13 A So, again, for last look, I think this is an accurate
14 approximation, the 14.25 percent. And I believe I also
15 mentioned the other approach.

16 Q Let me ask you this, sir: In your reports, you did not
17 give any opinion about what -- you have a 14.25 percent
18 number and a 2.25 percent number. You didn't give any
19 opinion about what the right number should be between those
20 two numbers; did you?

21 A For last look I did.

22 Q What number did you give?

23 A 14.25 percent.

24 Q Oh, all right. But then you went ahead and said -- so
25 for this, you're assuming that even if the next bidder was

Cross-Examination - G. Weintraub

1 not another exchange, that when Google won, it was at the
2 expense of that rival, right?

3 A Sorry. I didn't --

4 Q So remember your second type of analysis?

5 A Yeah.

6 Q Google has the top bid, and the rival has the
7 second-highest bid, right?

8 A Right.

9 Q For the 14.25 percent, you're assuming that Google is
10 taking scale from the rivals even if it wasn't the second
11 bid, even if it wasn't the third bid, even if it wasn't the
12 fourth bid, right?

13 A So from this -- for the substitution for rival
14 exchanges analysis, I do not use the GAM June 2023 data. I
15 don't perform that analysis that you're saying.

16 Q Right. And if you look at paragraph 200 of your
17 opening report --

18 A Just give me just one second. Paragraph 200 you said,
19 right?

20 Q Paragraph 200. This is right under your Table 1 and
21 Table 2 that we're discussing. And what you say they are,
22 there are reasons to believe that the gains to AdX from last
23 look primarily come at the expense of rival exchanges. You
24 did not say in your report that that 14.25 percent was the
25 correct number; did you?

Cross-Examination - G. Weintraub

1 A I think what I'm saying is that it's an accurate
2 approximation.

3 Q Sir --

4 THE COURT: You don't have to keep on doing it. I
5 get the point.

6 MR. ISAACSON: All right. Thank you, Your Honor.

7 BY MR. ISAACSON

8 Q All right. Let's look at sell-side, N15, sell-side
9 dynamic revenue chart. Let's see if we can just whip
10 through the two sets of numbers.

11 So if we look at PTX 1328, which is Table 3 --

12 MR. ISAACSON: I'd move to admit PTX 1328.

13 MR. TESLICKO: No objection.

14 THE COURT: All right. It's in.

15 MR. ISAACSON: Okay. Just put it on the screen,
16 mat.

17 BY MR. ISAACSON

18 Q All right. And that has the 2.39 percent and 2.74
19 percent numbers that you displayed to the Court. Do you see
20 that?

21 A Yes.

22 Q Okay. In the second analysis, which would be Table 4,
23 which is PTX 1329 --

24 MR. ISAACSON: I'd move to admit PTX 1329.

25 THE COURT: All right. It's in.

Cross-Examination - G. Weintraub

1 MR. TESLICKO: No objection.

2 BY MR. ISAACSON

3 Q There, instead of negative 2.39 percent and negative
4 2.74 percent, you found negative .34 percent and negative
5 .53 percent, correct?

6 A Right, that's conservative estimate.

7 Q Right. But the Unified Pricing Rules, which is M16 --
8 there's the negative 7.9 percent and negative 2.75 percent.
9 If we look at PTX 1331 --

10 MR. ISAACSON: Which I will move to admit .

11 THE COURT: All right. It's in.

12 BY MR. ISAACSON

13 Q There's the 7.95 percent and the 2.75 percent, correct?

14 A Correct.

15 Q Okay. Then your alternative analysis, which would be
16 PTX 1332 --

17 MR. ISAACSON: Which I move to admit.

18 THE COURT: It's in as well.

19 MR. TESLICKO: No objection.

20 BY MR. ISAACSON

21 Q All right. There's negative 1.18 percent and negative
22 0.53 percent, right?

23 A Right.

24 Q And you agree that it's possible that under the Uniform
25 Pricing Rules caused auctions to be won that would not

Cross-Examination - G. Weintraub

1 otherwise have been won, correct?

2 A I think that is a possibility among others.

3 Q I'm sorry. I didn't hear you. Did you agree with me?

4 A Why don't you repeat your question, please.

5 Q Sure. You agree that Uniformed Pricing Rules cause
6 auctions to be won that would not otherwise have been won,
7 correct?

8 A So I think that depends on how the floors move. I
9 think that's possible. I don't know for sure, but I think
10 that's a possibility.

11 Q Now, those charts that we all just looked at and that
12 we've been looking at, are those worldwide?

13 A Yes.

14 Q All of your calculations have been worldwide?

15 A Yeah. Google only provides worldwide experimental
16 results, which is what I'm relying on.

17 Q And you applied those over impressions worldwide?

18 A Or ad spend, impressions or ad spend worldwide
19 depending on -- yes.

20 Q All right. So you're saying to the Court, if the Court
21 wants to measure the competitive effect of Google's conduct
22 now and in the future, this Court is going to have to
23 measure those effects around the world, right?

24 A I don't think I'm saying that.

25 Q Isn't that the implication of what you're saying?

Cross-Examination - G. Weintraub

1 You're saying to the Court, if you want to know what effect
2 Google is having on its rivals, you shouldn't just look at
3 the United States; you're going to have to look at this
4 around the world, right?

5 A I used worldwide data because that's what Google
6 produced. That is the only data available from Google's
7 experiments.

8 Q And you thought it was appropriate to look at that data
9 for this case?

10 A Right.

11 Q All right. Now, let's go back to last look and talk
12 about the experimental support for that. All right. So,
13 again, this is N14. We're talking about this analysis, and
14 if we could -- 1045 is now in evidence, which means it's in
15 both your binders whether it's from -- it's PTX 1035. You
16 can stay in the black binder if you want. PTX 1035 is the
17 experiment that you relied on for your calculation based on
18 last look, right?

19 A Right.

20 Q And specifically -- and actually, let's -- let's go
21 back to the slide because it's easier to read than the
22 actual document -- wait. No, not that one. N11. So N11 is
23 drawn from PTX 1035. Do you remember that?

24 A Yes.

25 Q Okay. And that's where you're getting the negative

Cross-Examination - G. Weintraub

1 impressions of revenue, negative 9.41 percent and negative
2 9.62 percent; is that right?

3 A I believe so.

4 Q No. It's -- is it the first -- which line is it? It's
5 the top line, right, negative 9.4 percent and negative
6 9.6 percent, right?

7 A Yeah. I need to look to my report to be 100 percent
8 sure, but I think you're right.

9 Q Okay. Now, what it also shows is post rev share payout
10 over on the right, negative 10.6 percent, right?

11 A Yes.

12 Q Okay. That means that removing last look -- to get rid
13 of it, publisher payouts from AdX would go down by 10.64
14 percent, right?

15 A Right, and likely they will recoup it from rivals.

16 Q Okay. You don't know that though; do you? You're
17 assuming that the other ad exchanges can do just as good a
18 job and provide all the revenue that AdX can, right?

19 A Even the mechanics of how last look works --

20 Q I am going to move on, sir, because I don't think
21 you're answering the question. This experiment says that if
22 you get rid of last look, publishers are going to make
23 10 percent less money, publishers on AdX, correct?

24 A Correct.

25 Q And you think that it's appropriate -- no, I don't --

Cross-Examination - G. Weintraub

1 Let's go to sell-side, N15. Now we're moving to
2 the sell-side dynamic revenue share.

3 By the way, are you assuming that another expert
4 in this case has said that sell-side dynamic revenue share
5 is anticompetitive?

6 A No.

7 Q Are you -- who told you -- who told you that sell-side
8 DRS was a competition issue in this case?

9 MR. TESLICKO: Objection, Your Honor. I believe
10 this goes into our expert stipulation to the extent counsel
11 is asking for communications between the expert and
12 witnesses or -- sorry, the expert and counsel or the expert
13 and other experts.

14 THE COURT: The basis for his conclusions or even
15 his assumptions is definitely relevant to the Court's
16 evaluation. So I am going to allow it without going into --
17 just generically ask where it came from.

18 BY MR. ISAACSON

19 Q So I just want to know, you know, how did you decide to
20 do a competition analysis based on sell-side DRS?

21 A So a two-part answer. So first, the analysis is on the
22 impact on rival scale, and second, my focus, as I said on
23 direct, is an enhancement of last look. It is not the total
24 effect. It's the part that enhances last look.

25 Q But you did not do an analysis based on the enhancement

Cross-Examination - G. Weintraub

1 of last look. You did an analysis of sell-side DRS, a world
2 with sell-side DRS and a world without, right?

3 A Right. Because the experiment that Google runs doesn't
4 separate those two effects. I couldn't separate those two
5 effects. This experimental results, you're right, include
6 the overall effect, not just the enhancement.

7 Q Right. So let's look at PTX 13 -- no, DTX 313.

8 THE COURT: Is there any objection to Defense 313?

9 MR. TESLICKO: Yes, Your Honor. We'd object on
10 hearsay to the extent this is a statement by --

11 MR. ISAACSON: Let me just ask, if I may, Your
12 Honor.

13 BY MR. ISAACSON

14 Q This is one of the experiments that you relied on for
15 yourself -- for your calculations on -- on your sell-side
16 dynamic revenue share calculations, correct?

17 A Sorry. Should I be look at something?

18 Q Sure, DTX 313.

19 A DTX 313.

20 Q All right. And if you want -- if you don't remember,
21 I'll show it to you because it's cited in your chart.

22 THE COURT: Well, if it's cited in the report,
23 then it should be coming in at least for foundation
24 purposes.

25 MR. TESLICKO: Yes, Your Honor. With that

Cross-Examination - G. Weintraub

1 foundation, we would withdraw our objection.

2 THE COURT: All right. It's in.

3 BY MR. ISAACSON

4 Q Do you recognize on page 3 of 22 that this was the
5 report of an experiment that you relied on in terms of doing
6 your calculations for sell-side revenue share?

7 A I mean, I -- 50 experimental results. It's possible.
8 I don't remember exactly.

9 Q All right. Let's look at PTX 1326, which we looked at
10 before. I think it's in evidence. If you go down to -- and
11 you'll see 1324. Sorry, I've got the wrong one.

12 MR. ISAACSON: Yeah. I need 1326, Matt. Yeah,
13 there we go.

14 THE COURT: 1326?

15 MR. ISAACSON: I have some number written down.
16 Can we look at 1328? I apologize. I have written down the
17 number wrong. Yeah, here we are.

18 BY MR. ISAACSON

19 Q All right. Do you see effect on gross revenues,
20 there's a reference in the second line to a prelaunch deck?

21 A Sorry. What are you reading again?

22 Q Look on effect on gross revenue --

23 A Yes.

24 Q -- sell-side DRS Version 2 prelaunch deck, the second
25 thing, right? And then that has a Bates stamp number down

Cross-Examination - G. Weintraub

1 at the bottom, the last line, 13235100?

2 A Yes.

3 Q And that's the Bates stamp number for DTX 313 that
4 we're looking at. Sorry. Does that help you remember that
5 this is a document you relied on?

6 A Yeah.

7 Q All right. And on page 3, it reports a lift in AdX
8 revenue, but in addition to that, it also reported a lift in
9 publisher revenue of 2.8 percent, including remnant, and
10 4.17 percent excluding remnant, right?

11 A Yeah.

12 Q All right. And it says up above dynamic revenue share
13 consistently makes publishers more money, right?

14 A That's what it says there.

15 Q Okay. And you agree that Version 2 of sell-side
16 dynamic revenue share increased publisher revenue through
17 AdX, correct?

18 A I agree that sell-side dynamic revenue share increased
19 publisher revenue through AdX.

20 Q And so now if we can look at -- let's go to Uniform
21 Pricing Rules. This is PTX 1331, hopefully, which I believe
22 I --

23 THE COURT: That's in evidence.

24 MR. ISAACSON: Yes.

25

Cross-Examination - G. Weintraub

1 BY mr.isa

2 Q And for this, you relied on an experiment -- now, this
3 is June 2023 data that you used for this, right? I think
4 you said that before. Maybe I got that wrong.

5 A So this is I think don't use.

6 Q I think I misstated it. My colleague said you used
7 2015 data, right?

8 A Right.

9 Q Okay. And look at the two experiments that you cite in
10 the footnotes, in the last two footnotes. Okay. The
11 experiments were run on September 3, 2019, correct, or at
12 least the documents reporting the -- actually, I should be
13 more precise. The documents reporting the experiment are
14 dated September 3, 2019, correct?

15 A I believe so.

16 Q Okay. That was before the Unified Pricing Rules
17 together with the unified first-price auction launched,
18 correct?

19 A Well, typically, these experiments are run before the
20 launch to estimate impact.

21 Q So am I correct about these experiments?

22 A I think so, and I think that makes sense because
23 experiments are typically run to estimate the impact for
24 launch.

25 Q And the experiments here were run applying the Uniform

Cross-Examination - G. Weintraub

1 Pricing Rules operating under a second-price auction,
2 correct?

3 A I --

4 Q Let me help you remember.

5 A Yeah, I think that sounds correct. I would try to go
6 back to the documents, but I think that sounds correct.

7 Q Let's make sure we've got this right here. If you look
8 at paragraph 250 of your opening report, the last sentence
9 says, For example, in reporting the experimental results for
10 UPR, presentation appears to indicate that the treatment and
11 control groups operated under second-price auctions?

12 A I'm sorry. I'm getting there. So it's paragraph 250
13 of --

14 Q 250, yes, page 164.

15 A Yes.

16 Q And you see the last sentence?

17 A Yes.

18 Q You see the last sentence?

19 A Yes.

20 Q Right. So the experiment that you are extrapolating
21 from runs Uniform Pricing Rules in a second-price auction,
22 and the Uniform Pricing Rules never ran in a second-price
23 auction; did they?

24 A So you're right. That's the experiment that Google
25 relied on to decide whether to launch or not UPR. I think

Cross-Examination - G. Weintraub

1 that's the best experimental result I review to estimate
2 impact.

3 Q So you think the effect of Uniform Pricing Rules would
4 be the same in a second-price auction as a first-price
5 auction?

6 A I'm not sure.

7 Q All right. And you say Google relied on it. All
8 right. If Google relied on it, experiment results showing
9 the effect of Uniform Pricing Rules and a second-price
10 auction and then did a first-price auction, are you
11 suggesting that Google relied on it to do something
12 different than what was being done in the experiment?

13 A So my understanding is there were different exchanges
14 done at the same time, and there -- and based -- at least my
15 understanding of the evidence I reviewed is that Google ran
16 separate experiments to isolate the effects. And that's, I
17 think, in my opinion rightly so, the experiment I used to
18 estimate the impact of UPR. It is true that it's under
19 second-price auction. I would assume that the impact of UPR
20 under the first-price auction -- direction of it would be
21 similar. Maybe the exact numbers are not the same, but the
22 direction of it I think would still be similar.

23 Q I am not going to go through this with you, sir. I am
24 not sure if you've been here. Are you aware of evidence
25 that a first-price auction would have very different

Cross-Examination - G. Weintraub

1 effects -- I'm sorry. Are you aware of evidence that the
2 Uniform Pricing Rules would have very different effects in a
3 first-price auction than a second-price auction?

4 A So I agree that the results --

5 Q Stop.

6 A -- may be different, but I think directionally, there's
7 some --

8 Q Focus on the question, sir. Are you aware of evidence
9 in this case that the effect of Uniform Pricing Rules in a
10 first-price auction would be very different from that of a
11 second-price auction?

12 A In terms of experimental results, I am not.

13 Q Now, you spoke generally that when you looked at Google
14 experiments, you believed that Google relied on its
15 experiments. Were there some experiments that Google did
16 and looked at and said, well, those weren't very good
17 experiments; we're not going to rely on those?

18 A So what I mean rely is rely to make a decision. The
19 decision could be to launch or not to launch. So if the
20 experiment doesn't have a positive effect, they decide
21 typically not to launch, but you're still relying on the
22 experiment to make a decision.

23 Q I am asking you something slightly different. Were
24 there some experiments that Google ran and said, this isn't
25 valid looking at it. We're not going to rely on this to

Cross-Examination - G. Weintraub

1 make a decision to launch or not to launch.

2 A So the evidence that I reviewed is that Google used
3 experiments to make decisions in their ordinary course of
4 business. Whether it's for some particular cases
5 specifically they did not rely on that data, I think that's
6 possible. The evidence is that generally speaking, they run
7 experience in their ordinary course of business.

8 Q It is pretty normal in the ordinary course of business
9 when you're running experiments to have some experiments
10 where you look at what you did and the results and say,
11 well, that wasn't a good idea. We're not going to rely on
12 that. That happens with experiments, right?

13 A You're still relying on the experiment to make a
14 decision.

15 Q If you decide not to rely on it, you just say, that
16 didn't work out. We can't rely on this for anything.
17 That's a normal thing that happens with experiments; isn't
18 it?

19 A I'm sorry. Maybe we are misunderstanding each other.

20 Q I'll move on.

21 Do you know -- all right. Let's talk about your
22 first look, N19. Is this also worldwide?

23 A I mean, this is a bit different because I am not using
24 experimental -- oh, sorry. You said first look. That's why
25 I got confused. This is Google Ads -- we're going back --

Cross-Examination - G. Weintraub

1 Q Right. I'm moving topics here to N19, effects of
2 Google Ads exclusivity. Is this analysis worldwide?

3 A Yes.

4 Q Now, it says at the top head-to-head and first look
5 or -- oh, I'm sorry. The chart changed.

6 I'm sorry. I tried to number these to be helpful.
7 Effects of first look, head-to-head and first look. Thank
8 you. Sorry for the confusion.

9 A No worries.

10 Q Is this worldwide?

11 A So this is in terms of share of impressions one and can
12 be applied worldwide.

13 Q Okay. And over to the left is head to head. On the
14 right is first look. What you're comparing is something
15 called head-to-head to first look, right?

16 A Right.

17 Q Okay. And head-to-head means that multiple exchanges
18 compete simultaneously, correct?

19 A Right. In one auction, yes.

20 Q All right. And when first look first appeared around
21 2009, head-to-head didn't exist; did it?

22 A There wasn't -- right, there was not an option whether
23 other exchanges could compete with real-time bids. That was
24 the first look.

25 Q Right. And what you're saying here for purposes of

Cross-Examination - G. Weintraub

1 this comparison is let's compare first look if Google had
2 implemented some sort of head-to-head simultaneous
3 competition of multiple exchanges, correct?

4 A I don't think I'm saying Google would have implemented.
5 I am not opining on that. I am just saying head-to-head as
6 a counterfactual --

7 (Reporter clarification.)

8 A -- as a counterfactual world to compare against first
9 look.

10 Q So in the counterfactual world of head-to-head, Google
11 implements the technology of simultaneous bidding from
12 multiple exchanges, correct?

13 A I'm not opining that Google should or could have done
14 that. I am using this as a counterfactual that -- I mean,
15 later on this was -- the industry implemented this bidding
16 outside Google.

17 Q The counterfactual -- it's your counterfactual.
18 Somebody has to implement it, right? You're assuming in the
19 counterfactual -- and in this counterfactual world, that
20 Google has done -- created this head-to-head competition,
21 correct?

22 A So, again, I am standing at the -- I am not assuming
23 that Google should have or could have done something. This
24 could also be a header bidding. This is what it
25 accomplished for auction, and that was not done by Google.

Cross-Examination - G. Weintraub

1 That was done by rival exchanges -- by outside Google.

2 Q So in your counterfactual world, you're assuming that
3 Google for some alternative, like header bidding, has
4 created this alternative?

5 A I'm using head-to-head as a counterfactual to estimate
6 the effect. My focus is on estimating the effect.

7 Q And do you have some basis for saying that -- do you
8 have a period of time in your head when this didn't exist
9 and when it started to exist, or do you think it doesn't
10 exist now?

11 A Well, so header bidding started in 2014 and became
12 popular around those years.

13 Q Right, and that's -- header bidding would meet your
14 criteria for head-to-head?

15 A Right.

16 Q All right. And if we look at PTX 1323, this is the
17 chart from your report. I don't think it's in evidence.

18 MR. ISAACSON: I'd move it into evidence.

19 THE COURT: It's in.

20 MR. ISAACSON: Okay. Thank you, Your Honor.

21 BY MR. ISAACSON

22 Q You actually did more than the head-to-head comparison
23 in your report?

24 A Correct.

25 Q So would you show the Court in the pie charts -- it was

Cross-Examination - G. Weintraub

1 a comparison of first look and head-to-head, right?

2 A Yes.

3 Q Okay. You also did a comparison of first look to fair
4 waterfall, right?

5 A Yes. By a third waterfall, I mean that half the time
6 one exchange is on the top; the other half the other
7 exchange is on the top.

8 Q Okay. And when you compared first look to a fair
9 waterfall, you got the same results?

10 A So this is in terms of total publisher payout. I think
11 if you comparing terms of scale, of rival scale, I think it
12 would still be different. Because first look would have an
13 exchange always in the top, and the waterfall would be
14 flipping. So I think in this metric, yes, first look and
15 waterfall are the same. For other metrics, such as a scale,
16 I think that that would still be different.

17 Q And before Google introduced dynamical allocations,
18 publishers were already selling inventory using the
19 waterfall, right?

20 A Sorry. Can you repeat that, please?

21 Q Before Google introduced dynamical allocation,
22 publishers were already selling inventory using the
23 waterfall, correct?

24 A I think the waterfall, yeah, it was common in the
25 industry.

Cross-Examination - G. Weintraub

1 Q All right. Let's talk about Project Poirot.

2 THE COURT: This is a good time to take the break
3 until 4:30.

4 Thank you.

5 (Brief recess taken.)

6 THE COURT: All right. Counsel, I assume you're
7 going to wrap this up in a couple of minutes.

8 MR. ISAACSON: Yeah, I'm going to talk about
9 Project Poirot, and then I'm done.

10 Should I start, Your Honor?

11 THE COURT: Go ahead.

12 BY MR. ISAACSON:

13 Q It's Bill Isaacson again, sir. Project Poirot was your
14 slide. We marked it N17. This is what you showed the
15 Court. And looking at PTX 1330, I believe it's -- which I
16 believe has been admitted into evidence -- one of the
17 experiments that you relied on for this is in your binder at
18 PTX 518.

19 Do you recognize PTX 518, sir, or should I show it
20 to you in your footnotes?

21 A Give me a -- I'm looking for it. Give me just one
22 second.

23 Q There's the DTXs followed by the PTXs.

24 A And you said the number. PTX?

25 Q 518.

Cross-Examination - G. Weintraub

1 A Yeah.

2 Q Do you recognize this as experiment results that you
3 relied on for your Poirot analysis?

4 A Yes.

5 MR. ISAACSON: I move to admit PTX -- 518 is
6 admitted already. All right.

7 BY MR. ISAACSON:

8 Q If you look at page --

9 MR. ISAACSON: Well, go to the next page, Matt.

10 BY MR. ISAACSON:

11 Q On 3p exchanges, do you see that in the upper left-hand
12 corner?

13 A Yes.

14 Q Right. That's what you relied on for impressions and
15 revenues here, right? Impressions negative 15 percent and
16 revenue negative 20.52 percent, right? That's -- you took
17 those numbers and worked from there, right?

18 A I would need to go and look back into the details. I'm
19 not exactly sure. There's a lot of numbers here, but it's
20 possible. It sounds right.

21 Q And what this also showed, if you move down to surplus,
22 is this experiment having to do with Project Poirot showed
23 and increase in surplus of 11.48 percent, correct?

24 A Right. I believe that's DV360 advertiser surplus, I
25 think.

Cross-Examination - G. Weintraub

1 Q Yes. Project Poirot was being implemented on DV360?

2 A Correct.

3 Q And so the advertisers were getting increased surplus
4 or value from their advertisements of 11.48 percent?

5 A DV360 advertisers. Note the totality of advertisers,
6 but yes, DV360 advertisers.

7 Q All right. And the -- and then -- now, let's go over
8 to the left -- I'm sorry -- to the right. So that's on all
9 3p exchanges. Then there's on 3p unclean exchanges, and
10 then there's clean 3p.

11 Do you see that?

12 A Yes. Would you mind moving the -- yeah. Thank you.
13 Thanks.

14 Q All right. So Project Poirot was aimed at dirty
15 auctions, right?

16 A Project Poirot shaded on what was suspected to be
17 non-second-price auctions.

18 Q Right. And non-second-price auctions, you've heard
19 them referred to as dirty auctions, right?

20 A I've heard that.

21 Q Okay. So when you say clean and unclean, that's what
22 you understand we're talking about here is the unclean
23 exchanges are pretending to be -- are not running clean
24 second-price auctions?

25 A Right. They are not running second-price auctions,

Cross-Examination - G. Weintraub

1 right.

2 Q And so when they're calculating reduced impressions in
3 revenue, okay, they are -- we are talking about what's
4 happening to unclean exchanges, right?

5 A The change -- or at least what DV360 suspected to be
6 exchanges not running second-price auctions.

7 Q Right. And if you look at clean third-party over on
8 the right, nobody running a clean auction was hurt according
9 to this experiment. In fact, they all went up, you know, by
10 a fraction of a percent?

11 A Yeah, at least according to DV360, the definition of --
12 suspicion of whether it was clean or not clean, correct.

13 Q Right. And based on this experiment, you would say the
14 estimated effect of the experiment is that short-run
15 advertiser surplus went up for DV360 advertisers, correct?

16 A That showed -- DV360 advertiser surplus went up, yes.

17 Q And I'm saying that term "short-run" because that's the
18 term you used at your deposition. And so why are you saying
19 that the results of this experiment are short-run?

20 A So Poirrot -- there's evidence that Poirrot, by reducing
21 rival scale, had an impact on rival exchanges, exchanges
22 that needed to fire people, reduce investments in product
23 quality. So if you think about the longer-term impact for
24 advertisers, one could think that that reduced choices for
25 advertisers' buying choices, and that could have a negative

Cross-Examination - G. Weintraub

1 effect in the long-run. That's what I was referring to.

2 Q Is another way of putting it that when you run an
3 experiment for a day or a week, that things may change later
4 in the long-run that the experiment can tell you what's
5 happening in the short-run but doesn't necessarily tell you
6 what's happening in the long-run?

7 A That's generally correct, and that's something I
8 discussed in my report, how this short-run effect is going
9 to be amplified because of the feedback loops I discuss.

10 Q Right. They can be amplified, or they could go away,
11 right?

12 A When I think about this -- like, for example, the
13 exchange market, I can think of recent and direct network
14 effects are things well-studied in the -- recent that are
15 well-studied, like in direct network effects, that amplified
16 these short-run effects. I -- I can't think of obvious
17 reasons on why these effects would disappear.

18 Q Right. In terms of these experiments, which are run
19 for a day or days or weeks, have you seen Google documents
20 where they use those experimental results and then they
21 project those results over five years, such as you've
22 suggested here?

23 A I think -- so I haven't seen that, and the results are
24 still --

25 Q That answers my question.

Cross-Examination - G. Weintraub

1 A -- are still used to make decisions, but I haven't
2 seen, like, a five-year projection based on that.

3 Q All right. The -- can we look at PTX 860, which has
4 been admitted.

5 And do you recognize this as having -- also having
6 experimental results that you relied on for your Poirot
7 analysis?

8 A Right.

9 Q All right. 860 on second page has aggregated results.
10 It's a 1 percent experiment over nine days in 2018, correct,
11 in August of 2018?

12 A Right.

13 Q Again, before -- well, actually, I don't -- no, I don't
14 want to say that.

15 So then there is -- surplus is the second column.
16 Do you see that?

17 A Yes.

18 Q Again, the results are showing an increase in
19 advertiser surplus or value for the advertisers on DV360,
20 correct?

21 A Right.

22 Q Okay. The -- now, then down at the bottom, the results
23 per exchange, do you see that?

24 A (No audible response.)

25 Q All right. For the advertisers on -- on the exchanges

Cross-Examination - G. Weintraub

1 listed here, there's a large number of them with significant
2 increases in surplus for their advertisers, correct?

3 A So my interpretation of the results is that the DV360
4 advertiser surplus on these exchanges is going up by these
5 percentages.

6 Q Yes, you're right, specific to DV360 advertisers. And
7 then on the next page there's a chart saying, all right,
8 here is the impact on the major exchanges restricted to
9 fixed CPM DBM traffic. This is the slice Poirot was active
10 on.

11 A This is what? Excuse me?

12 Q You see --

13 MR. ISAACSON: Highlight the language, Matt.

14 BY MR. ISAACSON:

15 Q Now, we look at the impact on major exchanges
16 restricted to fixed CPM DPM -- that's DV360 -- traffic.
17 This is the slice Poirot is active on. We also add results
18 from advertiser distribution analysis.

19 And you see over in the right-hand column enormous
20 increases in advertiser surplus and value, don't you?

21 A Right. So DV360 advertiser value increases the -- the
22 scale of the exchanges goes down. That's what this is
23 showing.

24 Q I am going to hope that page 18 of your Exhibit N --
25 that I have this right -- this is your Poirot chart.

Cross-Examination - G. Weintraub

1 So the time period this chart ends, November 2019,
2 correct?

3 A Yes.

4 Q So you have not charted on here the -- what the ad
5 spend by DV360 is after 2019, correct?

6 A Correct. This was seen on the period after Poirot.

7 Q And I think we established earlier it went up by a lot
8 after this, right? Remember when we were looking at the
9 numbers for 2022 for DV360?

10 Maybe you don't. I won't keep you to that.

11 But even during this period, that line there, the
12 dark line which is between -- and these are monthly numbers,
13 right?

14 A Right.

15 Q Right. So these are not -- these are monthly numbers.
16 And that dark line shows on a monthly basis at the end of
17 2019, it looks like about 70 million per month on non-Google
18 exchanges?

19 A Maybe it's more closer to 60 but around there.

20 Q Yeah, at the very end. I was at November, but okay.

21 A Okay.

22 Q 60 to 70, around there?

23 A Sure.

24 Q And, in fact, you have Poirot Volume -- Volume 2 --

25 A Version 2.

Redirect Examination - G. Weintraub

1 Q Version, right. Version/volume. Version 2, the
2 numbers go up on non-Google exchanges from September 2018 to
3 November 2019, right? They end up trending upwards?

4 A Right, that's what this graph shows.

5 Q Thank you, sir.

6 MR. ISAACSON: I don't have anymore questions.

7 THE COURT: Any redirect?

8 MR. TESLICKO: Yes, Your Honor.

9 REDIRECT EXAMINATION

10 BY MR. TESLICKO:

11 Q Professor Weintraub, you were asked by Google's counsel
12 a number of questions about your auction level analysis. Do
13 you remember that?

14 A Yes.

15 Q On direct, you mentioned that it provided a
16 conservative estimate of the impact of Google's conduct.
17 Can you explain to the Court why it's a conservative
18 estimate of Google's conduct?

19 A So this analysis estimating pattern rival scale uses
20 the June 2023 data to identify auctions in which AdX is the
21 winner, and there's a competitive rival. And there are at
22 least two reasons why this analysis provides a conservative
23 estimate.

24 First, it wasn't always clear from the data how to
25 identify rivals, and I made conservative assumptions in that

Redirect Examination - G. Weintraub

1 dimension.

2 And second and importantly, this is June 2023
3 data, which is after all the conduct had occurred. So
4 all -- the other conducts, not the conduct under study, have
5 already made rivals less competitive. And that
6 underestimates even more the impact on rival scale. So just
7 as an example, from the auctions that AdX is the only
8 exchange clearing the floor, 60 percent of them in the data
9 is Google Ads, the only bid clearing the floor.

10 So if it weren't for that exclusivity, the data
11 would be very different. Basically, because the data from
12 June 2023 is confounding the effect of the multiple conducts
13 as opposed to just isolating the conduct that I am trying to
14 study. And that underestimates and provides a conservative
15 estimate on the impact on rival scale.

16 Q And Google's counsel walked you through a number of the
17 comparisons between your substitution from rival exchanges
18 analysis and the auction-level analysis. You kind of
19 explained this on direct, but I think maybe it got lost in
20 translation. What is the mathematical relationship between
21 all of your estimates for the substitution from rival
22 exchanges analysis and the auction-level analysis?

23 A So at the impression level, the estimates of the GAM
24 June 2023 analysis are 14 percent of the substitution from
25 rival exchanges. And in terms of ad spend, they are

Redirect Examination - G. Weintraub

1 19 percent. The GAM June 2023 estimates are 19 percent in
2 terms of ad spend of the substitution from rival exchanges
3 estimates.

4 Q And you provided both estimates for all of the conduct
5 where you used the substitution from rival exchanges
6 analysis, right?

7 A Right. In all of them, they are provided in my report,
8 yes.

9 Q And those are all contained in the summary tables that
10 we moved into evidence earlier that showed both the
11 estimates based on substitution from rival exchanges and the
12 auction-level data, right?

13 A Correct.

14 Q Okay. And you mentioned on direct, in response to a
15 question about last look, that you thought last -- the
16 substitution from rival exchanges method was a better method
17 for estimating the impact of last look. Can you explain why
18 you believe that to be the case?

19 A So last look takes advantage of DFP having the clearing
20 price of rivals competing against the clearing price. And
21 so, basically, AdX needs to clear that clearing price --
22 needs to be at that clearing price, not necessarily the
23 highest bid, of rivals.

24 So because of the mechanics of last look, last
25 look is really about moving impressions from rivals to AdX,

Redirect Examination - G. Weintraub

1 and there's also evidence in Google's documents about this.
2 And that's why I believe -- I think the substitution from
3 rival exchanges provides an accurate estimate of the impact
4 of rival scale driven by last look.

5 Q Now, you were also asked by Google's counsel some
6 questions about Facebook and Amazon and whether you
7 estimated effects of Google's conduct on those two
8 companies. In your review of all the Google experimental
9 results here, did you see estimates of harm to Facebook?

10 A No.

11 Q And you were just looking with Google's counsel at PTX
12 518. That reported estimates of impacts on -- from Poirrot,
13 right?

14 A Correct.

15 Q In Google's estimates, its own estimates of an impact
16 on rival, do you recall seeing estimates of impacts on
17 Facebook or Amazon?

18 A I do not recall that.

19 Q Why do you think that's the case based on your reviews
20 of the documents here?

21 MR. ISAACSON: It calls for speculation.

22 THE COURT: Sustained.

23 BY MR. TESLICKO:

24 Q Do you recall on direct Google's counsel asked --
25 showing you various charts showing impressions and queries

Redirect Examination - G. Weintraub

1 and win rates over time?

2 A Yes.

3 Q I just wanted to make sure your testimony is clear.

4 Based on your review, in which direction has Google's

5 transaction volume in terms of impressions gone over time?

6 A Impressions over time have increased for AdX.

7 Q Okay. And Google's counsel showed you a figure from

8 your report. It was Figure 15 that reported publisher

9 payout associated with first look.

10 Do you remember that?

11 A Yes.

12 Q If we could pull up Figure 14 from your report, which
13 is on page 125, can you explain what this chart is showing?

14 A So this is the comparison in terms of scale, win rates
15 for AdX and rival exchanges. In the three models I
16 analyzed, I showed first look and head-to-head. In first
17 look, naturally, because of the advantage, AdX wins more
18 than the competitor. In head-to-head, it's 50/50. And in
19 the fair waterfall, it's also 50/50. So there's a
20 difference -- and the difference in terms of win rate is
21 between first look and the other two models.

22 Q And just to bring this full circle, if we could, flip
23 to Figure 15 for first look. This is the figure that
24 Google's counsel showed you. And can you explain what's
25 being shown on this figure?

Redirect Examination - G. Weintraub

1 A So this is the publisher payout. And in this case,
2 head-to-head is higher because there's always competition
3 between -- head-to-head competition between the two
4 exchanges where that's not true and not in first look. In
5 the fair waterfall, there's still going to be a fair
6 waterfall structure.

7 Q Now, Google's counsel also showed you --

8 You can take that down.

9 Google's counsel also showed you the slide in your
10 demonstrative that reported the experimental results of last
11 look. Do you remember that?

12 A Yes.

13 Q And he directed you to a portion of that slide that
14 reported on publisher payout. Do you remember that?

15 A Yes.

16 Q What is your understanding of what publisher payout
17 means in the context of Google's experimental result for
18 last look?

19 A So publisher payout in that -- in the context of
20 Google's experimental results for last look is the publisher
21 revenue in AdX. So it's not the total publisher revenue.
22 So publishers are selling through different exchanges. And
23 if you sum the revenue over all exchanges, that would be the
24 total publisher revenue. Payout, this is just the payout on
25 AdX through AdX.

Redirect Examination - G. Weintraub

1 Q And so what, if anything, does Google's experimental
2 results with respect to the publisher payout on AdX tell you
3 about overall publisher payout?

4 MR. ISAACSON: Objection. Calls for speculation.

5 MR. TESLICKO: I can ask a different question.

6 THE COURT: All right. Sustained.

7 BY MR. TESLICKO:

8 Q Based on your review of Google's experimental results,
9 does the publisher payout result of the last look experiment
10 tell us anything about overall publisher payout?

11 A So not necessarily. Because maybe what's happening --
12 and I think in last look that is --

13 MR. ISAACSON: I'm objecting. We're now getting
14 to speculation when he begins with "maybe."

15 THE COURT: Yeah, I'll sustain the objection.

16 BY MR. TESLICKO:

17 Q Jumping back slightly back to the first look analysis
18 we were looking at a few minutes ago, Professor Weintraub,
19 can you explain what fair waterfall means in that figure?

20 A So fair waterfall is -- we can think of it as a
21 waterfall where whenever an impression shows up, you flip a
22 coin. If it's heads, exchange one, like, AdX goes first.
23 If it's tails, the rival goes first. So it's like a 50/50
24 chance of each -- the AdX and the rival going first.

25 Q And how does that compare to the world you studied, the

Redirect Examination - G. Weintraub

1 actual world where Google had first look?

2 A Oh, in first look, AdX is always first.

3 Q And when you say somebody gets to go first, are you
4 talking about real-time bidding or something else?

5 A So it's real-time bidding. So you go first and run an
6 auction with real-time bids. And the second exchange only
7 has the opportunity to sell if the first one in the
8 waterfall doesn't sell the impression.

9 Q You were also asked a couple questions by Google's
10 counsel about Google's experiments related to Unified
11 Pricing Rules. Do you remember that?

12 A Yes.

13 Q And you said in your testimony that Unified Pricing
14 Rules is part of a bundle of changes in Google's products
15 that happen at the same time. Can you just explain what you
16 meant there first?

17 A So this was part of the unified first-price auction
18 where UPR was imposed. The auction format was moved to
19 first price, and last look was removed. So those -- a
20 bundle of those three changes.

21 Q And how did Google go about experimenting to estimate
22 the impact of those various changes that all occurred at
23 around the same time?

24 A So the experimental results I --

25 MR. ISAACSON: I'm going to object. He can talk

Redirect Examination - G. Weintraub

1 about what the experiments did, but now he's trying to
2 interpret what their purposes were.

3 THE COURT: Well, he didn't use the word
4 "purpose." He said how. That question was how did they do
5 it.

6 MR. ISAACSON: I heard differently, but if that's
7 the question, how did they do it, I have no objection.

8 THE COURT: Isn't that the question?

9 MR. TESLICKO: That is the question.

10 BY MR. TESLICKO:

11 Q Professor Weintraub, how did Google go about
12 experimenting the impacts of these various things that all
13 happened around the same time?

14 A So I -- I have relied on last look and UPR experiments,
15 and Google isolates -- ran experiments to isolate the impact
16 of this, at least for last look and UPR, which is the ones I
17 used, isolate the impact of a single effect among those
18 three.

19 Q To take us back -- sorry -- for one moment to your
20 estimates under the exchange from rival -- substitution from
21 rivals method and the auction-level method, when you ran the
22 conservative auction-level method to estimate the impact of
23 Google's conduct, were any of the results negative?

24 A No. There was always a positive reduction on rival
25 scale.

Redirect Examination - G. Weintraub

1 Q Okay. And you were also asked by Google's counsel
2 about whether you estimated the impact on any U.S. market,
3 right?

4 A Yes.

5 Q And why did you only estimate the impact on a worldwide
6 market for each of Google's conducts?

7 MR. ISAACSON: I'm going to object to the use of
8 the term "markets."

9 THE COURT: That's been already asked and answered
10 anyway. So move on.

11 MR. TESLICKO: Okay.

12 BY MR. TESLICKO:

13 Q Did you examine directionally whether the effects of
14 publishers and advertisers or ad exchanges in the U.S. would
15 be directionally similar to the impact of ad exchanges,
16 publishers, advertisers worldwide?

17 A So I --

18 THE COURT: The answer should be yes or no.
19 That's a direct question. The answer is yes or no.

20 THE WITNESS: Yes. Yes.

21 BY MR. TESLICKO:

22 Q And what was your opinion?

23 MR. ISAACSON: Do you want to show me where this
24 is in his report?

25 MR. TESLICKO: This was covered extensively at his
105

Redirect Examination - G. Weintraub

1 deposition as well.

2 THE COURT: It's late in the day for that. On
3 recross, you can get into it. All right?

4 MR. ISAACSON: I'm just saying this was not
5 disclosed. He's asking for an opinion that was not
6 disclosed, which makes recross very difficult.

7 THE COURT: Was the opinion, in your view,
8 included in the report?

9 MR. TESLICKO: If I could ask a predicate
10 question, I think we could lay it. But it was covered at
11 Professor Weintraub's deposition specifically in light of
12 his report.

13 THE COURT: Let me hear it.

14 MR. TESLICKO: Okay.

15 BY MR. TESLICKO:

16 Q Professor Weintraub, is the United States part of any
17 worldwide market?

18 A Yes.

19 Q And based on that, do you have any opinion as to
20 whether the effects of ad exchanges operating in the United
21 States would be similar or different from ad exchanges
22 operating worldwide?

23 MR. ISAACSON: I would object that this opinion is
24 not disclosed in his report, and his deposition is not --

25 THE COURT: Well, more than that, it's quite clear

Redirect Examination - G. Weintraub

1 that the basis for the analysis is based to a significant
2 degree on Google's experiments. And he's already clearly
3 said that Google's experiments are worldwide. So this line
4 of questioning is not going anywhere.

5 MR. TESLICKO: Okay. I will move on, Your Honor.

6 BY MR. TESLICKO:

7 Q A couple of more brief points. Professor Weintraub,
8 you were asked about the calendar example you gave in
9 describing how Google and rivals go about experimenting for
10 new features in ad tech.

11 Do you remember that?

12 A Yes.

13 Q How did you come to create the illustration portrayed
14 in that example?

15 A I used the scale data of the different exchanges and
16 the win rate data of the exchanges; so the actual scale data
17 of those three exchanges.

18 Q And the particular example you were using there was an
19 experiment to detect a .05 percent win rate, right?

20 A Yes.

21 Q How did you come up with that number?

22 A When I reviewed experimental data from Google, not just
23 the experiments I associated to the conducts I studied but
24 more broadly, the median effect of the launches of the
25 experiments that were launched was roughly --

Redirect Examination - G. Weintraub

1 MR. ISAACSON: I'm going to object. I don't think
2 this is -- median report of all of these experiments, I
3 don't think that's in his report.

4 MR. TESLICKO: I could get the cite for this, but
5 this example comes from Professor Weintraub's rebuttal
6 report.

7 MR. ISAACSON: There's an example, but that's what
8 he's talking -- he's not talking about one example.

9 MR. TESLICKO: I could ask another question, but
10 I'm eliciting testimony about how he came up with the
11 example used in the demonstratives today.

12 THE COURT: Well, the problem is that it's not
13 based on a specific experiment that was done; it's a
14 conglomerate of them. And I think that gives it less
15 reliability. Move on to something else.

16 MR. TESLICKO: Okay, Your Honor.

17 BY MR. TESLICKO:

18 Q Last questions I have for you, Professor Weintraub.
19 Early in your testimony in response to questions from
20 Google's counsel, you were shown two figures from your
21 report that display the ad tech stack, I think, as Google's
22 counsel referred to it.

23 A Correct.

24 Q Do you remember the origin of those particular figures
25 from your report?

Redirect Examination - G. Weintraub

1 A I think they may have come from Google documents.

2 Q Yes. And, Professor Weintraub, I can hand up --

3 MR. TESLICKO: And I can hand up to the Court.

4 BY MR. TESLICKO:

5 Q -- the Google document that those figures were based
6 on.

7 MR. TESLICKO: And we would move them into
8 evidence at this time.

9 THE COURT: Show them first to defense counsel.
10 Mr. Isaacson, take a look at this.

11 MR. TESLICKO: And I have copies for the Court.
12 This is PTX 1646, and it's cited in Professor Weintraub's
13 report as one of the sources for the figures that was
14 discussed on cross.

15 THE COURT: Mr. Isaacson, is there any objection
16 to this?

17 MR. ISAACSON: No objection to its admission.

18 THE COURT: All right. It's in evidence.

19 BY MR. TESLICKO:

20 Q Professor Weintraub, looking briefly at PTX 1646 -- and
21 if I could direct your attention to the page ending in 69 --
22 was this used as part of the basis for the figures shown to
23 you by Google's counsel?

24 A It's possible.

25 Q And putting that document to the side, Google's counsel

Recross-Examination - G. Weintraub

1 asked you whether exchanges are on the buy-side or the
2 sell-side of the market. Do you remember that?

3 A Yes.

4 Q Do some people consider -- in the market consider
5 exchanges to be in the middle of the ad tech stack?

6 A Yes. I think -- I mean, exchanges can be considered as
7 the market in the middle between buyers and sellers. I
8 think that's an interpretation I've heard.

9 Q And does it have any impact on your opinions today
10 whether the ad exchange is part of the buy-side or the
11 sell-side?

12 A No.

13 MR. TESLICKO: Okay. No further questions, Your
14 Honor.

15 THE COURT: Any recross, Mr. Isaacson?

16 MR. ISAACSON: Just briefly on that chart.

17 Matt, would you pull up Demonstrative 1, the one I
18 marked, figure --

19 RECROSS-EXAMINATION

20 BY MR. ISAACSON:

21 Q Okay. This is Figure 1 from your report. And what you
22 said was, "I provide a simplified illustration of the
23 buy-side and sell-side of the ad tech ecosystem in Figure 1
24 that follows."

25 That chart is something that you created, right?

Recross-Examination - G. Weintraub

1 A Sorry. I'm looking at it in my report.

2 Q Why don't you look at paragraph 28 of your report, the
3 second sentence, "I described these in the subsections below
4 and provide a simplified illustration of the buy-side and
5 sell-side of the ad tech ecosystem in Figure 1 that
6 follows," right?

7 A When I read the source in my report, it seems -- it
8 says --

9 Q My question is did you create this chart?

10 A I rely on Professor Lee, which I think also relies on
11 some Google documents.

12 Q Did you -- did you create this chart?

13 A I included this chart in my report. If --

14 Q I'm just looking for a yes or no answer, sir. Did you
15 create this chart?

16 A Personally, I created it? No.

17 Q Who created it?

18 A I believe it says here that the source is Professor
19 Lee.

20 Q I'm not asking you about the sources. Okay? This
21 picture is in your report. Did your staff create it?

22 A I -- we worked with a team to include -- create and
23 include this chart. I don't remember it -- to be honest, I
24 don't remember the details of the entire process on how it
25 happened.

Recross-Examination - G. Weintraub

1 Q Do you think your team created it, you reviewed it, and
2 it was put in your report?

3 A I think that's likely, yes.

4 MR. ISAACSON: I have no further questions.

5 THE COURT: All right. Does anybody anticipate
6 calling this witness again?

7 MR. TESLICKO: Your Honor, we reserve the right to
8 call Professor Weintraub in rebuttal.

9 THE COURT: All right. So, Professor, you've been
10 sitting through the trial. You can continue to sit through
11 the trial if you wish.

12 All right. Let's call your next witness.

13 But you're free to go right now.

14 THE WITNESS: Thank you.

15 MR. TEITELBAUM: Your Honor, at this time, with
16 the Court's indulgence, we'd actually like to --

17 I will stand at the lectern.

18 With the Court's indulgence, we'd actually like to
19 shift over to the read-in of a deposition, which should take
20 us to the end of the day or extremely close, if that's all
21 right, just given the lateness of the hour.

22 THE COURT: Is the witness not here?

23 MR. TEITELBAUM: The witness is here.

24 THE COURT: Let's stay on the list unless it's a
25 real problem for you. My clerks are tied up right now

Direct examination - R. Abrantes-Metz

1 reading. All right. You should have given us advance
2 notice if you need a reader.

3 MR. TEITELBAUM: Understood. We had not expected
4 Professor Weintraub to go as long as he did, but we'll call
5 the next witness.

6 MS. WOOD: The other concern, Your Honor, I would
7 just note that -- can this witness continue in the morning?
8 I know that we have another one of the Google employee
9 witnesses scheduled.

10 THE COURT: We'll break up the testimony, yeah, no
11 problem.

12 MS. WOOD: Okay.

13 MR. ISAACSON: And, Your Honor, I just want to
14 introduce Leah Hibbler, who's joining us at counsel table.

15 THE COURT: All right. Good afternoon.

16 MR. VERNON: Your Honor, the United States calls
17 Professor Abrantes-Metz.

18 And is it okay if we pass out binders, Your Honor?

19 THE COURT: Let's get the witness sworn in first.

20 ROSA ABRANTES-METZ, PLAINTIFF'S WITNESS, SWORN

21 THE COURT: All right. Ma'am, would you please
22 spell your full name for the record. Would you please spell
23 your full name for the record.

24 THE WITNESS: Rosa Abrantes, A-B-R-A-N-T-E-S,
25 hyphen, Metz, M-E-T-Z.

Direct examination - R. Abrantes-Metz

1 DIRECT EXAMINATION

2 BY MR. VERNON:

3 Q Good afternoon. Can you please introduce yourself to
4 the Court?

5 A Good afternoon. My name is Rosa Abrantes-Metz, and I'm
6 a PhD economist. I received my PhD from the University of
7 Chicago. I am currently a managing director at Berkeley
8 Research Group, and I specialize in the industrial
9 organization, finance, and econometrics. And over the last
10 20 years, I have focused in particular on matters related to
11 platforms, monopolization cases, conspiracies,
12 manipulations, fraud, and valuation matters.

13 I have testified on behalf of both defendants and
14 plaintiffs in North and South America and in Europe.

15 And previously I have taught at NYU Stern School
16 of Business, at the University of Chicago, and at Portuguese
17 Catholic University. And I was also an economist at the
18 Federal Trade Commission.

19 Q And can you turn in your binder to PTX 1781, the
20 smaller binder?

21 A Yes.

22 THE COURT: That's her curriculum vitae?

23 MR. VERNON: Yes, Your Honor.

24 THE COURT: All right. It's in evidence.

25 Let's move on.

Direct examination - R. Abrantes-Metz

1 MR. VERNON: Your Honor, plaintiffs offer Dr. Rosa
2 Abrantes-Metz as an expert in industrial organization
3 economics.

4 THE COURT: Any objection?

5 MR. ISAACSON: No objection.

6 THE COURT: All right. She's so qualified.

7 BY MR. VERNON:

8 Q Can you describe your assignment in this case?

9 A I was asked to make a determination as to whether
10 particular conducts engaged by conduct were exclusionary,
11 whether they harmed rivals' ability to compete harming
12 competition and harming end users -- so consumers and also
13 market participants, publishers, and advertisers.

14 Q At a high level, what opinions did you reach about the
15 effects of Google's conduct on competition?

16 A In my opinion, Google's conduct led to impairment and
17 harm to competition in all three relevant markets in this
18 matter. In particular, they led -- they allowed Google to
19 protect from competition its ad exchange product, AdX; its
20 publisher ad server, DFP; and also its ad network, Google
21 Ads.

22 Q And how did Google's conduct impair competition in the
23 three markets you just mentioned?

24 A Well, as a whole, all of the conducts related to
25 restricting Google's different products' customers choices.

Direct examination - R. Abrantes-Metz

1 And by limiting those customer choices, they were able to
2 impair rivals from competing either in full or partially,
3 lessening competition, enhancing Google's various products'
4 market power, and leading to higher prices, which harmed
5 both advertisers and publishers.

6 Q You mentioned three markets. Do you offer independent
7 opinions about market definition for market power?

8 A No, I do not. I relied on Professor Lee's analysis for
9 both market definition and market power. But I did review
10 his work, and I did find it persuasive.

11 Q Did you conclude that any of Google's conducts harmed
12 competition?

13 A Yes, I did.

14 Q And can you just briefly list those conducts?

15 A There was a restriction of accessing real-time bids
16 from AdX to DFP, a conditioning of access of Google Ads also
17 to AdX. There's conduct called exclusive first look to AdX
18 and exclusive first look to AdX. There's also a last look
19 given to third-party publisher ad servers and publishers.
20 There's aspects of the Admeld acquisition that had
21 anticompetitive effects and another conduct called Unified
22 Pricing Rules or UPR.

23 Q Are you familiar with the phrase "exclusionary
24 conduct"?

25 A Yes.

Direct examination - R. Abrantes-Metz

1 Q And what does it mean?

2 A Well, it means that it's conduct that impairs the
3 ability of rivals to compete, and that can lead to harm of
4 competition. It can take various forms, and one of those is
5 to restrain customers' ability to choose which products they
6 want to buy and, therefore, through -- in that way, can make
7 competition harder for rivals of those products.

8 Q What problems result from the perspective of economics
9 from restricting customers' choice?

10 A From an economics perspective, when somebody is able to
11 restrict its customers' choices, it is directly or
12 indirectly sometimes limiting the ability of competitors to
13 compete for the choices of those customers. Because it is
14 the fact that normally in a competitive world, customers
15 have multiple choices that companies can then compete for
16 the choices of those consumers, and for -- and that is how
17 they are incentivated to lower prices, innovate more,
18 produce better products because they know they have a chance
19 at being chosen by the consumer.

20 Q Is there some conduct that harms rivals but does not
21 harm competition?

22 A Yes.

23 Q And what is that?

24 A Typically, that conduct is when one of the rivals
25 lowers the price to gain the choice of the consumer. That,

Direct examination - R. Abrantes-Metz

1 obviously, harms the other rivals because they lose the
2 opportunity to sell the product to that consumer but doesn't
3 harm competition. It is actually beneficial to competition.
4 So lowering prices or providing a better product is pro
5 competitive.

6 Q Are the six Google conducts that you listed examples of
7 Google winning more business by either creating a better
8 product or lowering prices?

9 A No. The six conducts that I analyzed all relate to
10 Google restricting choices of its own customers, which
11 enabled Google to enhance its market power, leading to
12 anticompetitive effects of higher prices and harming
13 publishers and advertisers.

14 Q Can you describe the analysis you performed in this
15 case?

16 A Sure. So I applied economic principles using my
17 experience as an antitrust economist and reviewed a variety
18 of evidence, both qualitative and quantitative evidence,
19 from Google's own internal documents, as well as a variety
20 of market participants' documents, all of which were part of
21 the evidence that I reviewed and analyzed from an economic
22 lens to be able to provide the opinions.

23 Q Did you do your own quantitative analysis of the
24 effects of Google's conduct?

25 A With a few exceptions, I did not.

Direct examination - R. Abrantes-Metz

1 Q And so setting aside the exceptions, why did you not do
2 your own quantitative analysis of the effects of Google's
3 conduct?

4 A Because in my determination, I did not need to make
5 those assignments. In order to make an assessment of the
6 anticompetitive or overall competitive effect of the various
7 Google conducts, I had plenty of information available from
8 Google's own internal studies and studies from other parties
9 that showed, in many cases, even quantified varies of the
10 conducts and their effects that were informative as to how
11 large and meaningful those effects were.

12 Some of the analyses were also qualitative, not
13 necessarily quantitative, but they all spoke to the
14 importance and the impact that the various conducts had.
15 And, of course, there were also other experts for the DOJ
16 that conducted analysis, quantitative analysis.

17 Q Let's start with AdX only providing real-time bids to
18 publishers who use DFP. First, can you explain, as an
19 economist, what it means to condition access to one product
20 on the use of another product?

21 A Sure. So, for example, if there's a firm that produces
22 Product A and also produces Product B, conditioning access
23 of one to the other means, for example, the firm is able to
24 impose on customers of Product A that if they want to buy
25 Product A, they must also buy Product B.

Direct examination - R. Abrantes-Metz

1 Q Can you explain, again based on economic principles,
2 how this conditioning can affect competition?

3 A So imagine that this firm is a monopolist in Product A.
4 So it has significant monopoly power in that product and,
5 therefore, has very many consumers of Product A, almost all,
6 in that market. And those consumers want to buy Product A
7 but are told by the monopolist that if they buy A, they must
8 buy B. Therefore, it makes it very hard for those who are
9 just competing in Product B to be able to gain market share
10 because the customers' choices have been restricted.

11 Q Focusing on AdX only providing real-time bids to
12 publishers that use DFP, can you explain very briefly how
13 this conduct worked?

14 A So this conduct -- AdX only provided real-time bids, so
15 the prize in real-time for individual impressions to
16 publishers that went through DFP. So if a publisher decided
17 to contact AdX outside of Google's publisher ad server
18 market, that publisher would not know in time of making an
19 informed decision of its sale what was the price that AdX
20 was willing to pay for its impression.

21 Q And how did this conduct affect the ability of
22 publishers to run an auction?

23 A The consequence of that is that if the publisher does
24 not go through DFP and, therefore, contacts AdX outside of
25 DFP, the publisher does not receive the price from AdX and,

Direct examination - R. Abrantes-Metz

1 therefore, cannot make a comparison of AdX's price for its
2 inventory against other alternatives that exist elsewhere
3 and, therefore, effectively cannot run an auction that is
4 inclusive of AdX.

5 Q Why did you find that this conduct was exclusionary?

6 A It is exclusionary because, just like in the examples
7 of Product A and Product B, it is tying DFP to AdX. And,
8 therefore, it is making it very hard for others competing
9 with DFP, other publisher ad servers to be able to compete
10 for publishers, their customers, because those customers are
11 essentially forced to use DFP in order to gain full access
12 to AdX. And by that, I mean getting to know what the price
13 of the impression they are willing to sell is.

14 Q And as an economist, how would you expect this to work
15 in a competitive market?

16 A Well, in a competitive market, AdX -- this is an AdX
17 rule. AdX favors DFP in this way. AdX would not as easily
18 be able to impose this restriction on some of its customers.
19 So publishers are part of AdX's customers; the other side
20 are the advertisers. And so AdX would have an interest, as
21 a platform, to expand as many of its customers as possible
22 and to access similarly as many of its customers.

23 So even if the customers, in this case publishers,
24 were to contact AdX outside of DFP, normally, as in any
25 other normally functioning market, AdX would normally have

Direct examination - R. Abrantes-Metz

1 had the incentive to give them the price that it is willing
2 to pay for their inventory. And that's because if they
3 didn't act that way, they would risk losing those publishers
4 contacting AdX outside of DFP to another competing platform.

5 So in a competitive world, AdX would have
6 incentive to do so; and publishers, independently of
7 contacting AdX through DFP or not, would be able to know
8 what was AdX's willingness to pay for their inventory and be
9 able to compare, as in any other market, their willingness
10 to pay against the willingness to pay from other buyers.

11 Q How does this conduct affect publishers?

12 A Well, publishers are essentially forced to use DFP.
13 They value AdX and -- but they know that if they want to be
14 able to compare AdX's price to other alternatives, the only
15 channel to do that is DFP. And therefore, they have almost
16 in this case no option to be able to make a comparison
17 between AdX and other sources and, therefore, will be using
18 DFP.

19 Q And why is access to AdX important to publishers?

20 A Well, AdX is a large exchange, and access to AdX is
21 important to publishers. If they don't access AdX, they
22 risk losing a large amount of revenues.

23 Q And aside from being a large exchange, are there any
24 other reasons why AdX is important to publishers?

25 A AdX is the only channel through which publishers can

Direct examination - R. Abrantes-Metz

1 reach Google Ads in full. We'll talk about a small -- an
2 exception to that, but for the most part, that is the only
3 way publishers can access Google Ads. And therefore, that
4 makes AdX even more valuable to publishers.

5 Q How does AdX only providing real-time bids to
6 publishers that use DFP affect competition in the ad server
7 market?

8 A Well, as I mentioned earlier, because AdX is important
9 to publishers because it's large and due also to the
10 restriction of having Google Ads essentially appear only on
11 AdX, publishers are essentially forced to use DFP. And most
12 recently, DFP has about 90 percent market share in the
13 publisher ad server market.

14 So it leaves basically no options, and it make it
15 very hard for competitors to effectively compete. In fact,
16 many of them have exited the market, and others have changed
17 their business model to compete less directly with DFP.

18 Q And what evidence have you relied upon to inform your
19 analysis of how AdX only providing real-time bids to
20 publishers that use DFP affects competition?

21 A There's a wide amount of evidence that relates not only
22 to internal documents from Google, but as well much
23 contemporaneous evidence related to publishers, how they did
24 not like this tie, how they would have liked to have had
25 options, and how if they went outside of DFP their revenues

Direct examination - R. Abrantes-Metz

1 would drastically be lowered, as well as contemporaneous
2 evidence and other evidence from rival publisher ad servers
3 who were unable to compete for customers because of the link
4 between DFP and AdX.

5 Q Do publishers that do not use DFP have any way to try
6 to get at least some access to AdX?

7 A Yes. So there's a way, a tag called AdX Direct where
8 publishers who want to contact AdX but do not want to use
9 DFP can contact AdX, put forward an impression, and give AdX
10 the opportunity to gain that impression.

11 But when they do so, AdX does not return the
12 price. So the publisher asks AdX, "Are you interested in
13 purchasing this impression?" and AdX gives back a yes or a
14 no. And if it is a yes, sends back the ad creative. But it
15 does not let the publisher know what the price it is that
16 it's paying in time for the publisher to be able to make a
17 comparison with other sources and even to give the publisher
18 the opportunity to refuse to take that price.

19 Q How effective was AdX Direct?

20 A The evidence shows that it was not effective, that it
21 had several problems, and it was also not widely used. For
22 example, using data from 2017 and 2018, I calculated that
23 less than 2 percent of all of AdX's revenues came from
24 third-party publishers using AdX through AdX Direct. So a
25 very small percentage.

Direct examination - R. Abrantes-Metz

1 Q What other workarounds did publishers using other ad
2 servers use to try to get at least some access to AdX?

3 A So some publishers developed what became known as the
4 dual ad server system, which is a system in which a
5 publisher could use a different -- different from DFP --
6 publisher ad server as their main ad server. But then as a
7 second one, they would use DFP so that they could get access
8 to real-time bids from AdX.

9 Q Does the dual ad server system allow a publisher to
10 avoid using DFP?

11 A No. So DFP was their second publisher ad server, and
12 that was the only way they could get -- obtain real-time
13 bids from AdX.

14 Q Did you evaluate contractual terms that apply the
15 publishers that use Google Ad Manager?

16 A Yes.

17 Q And can you explain the provision that you evaluated?

18 A There was a provision that applied to users of GAM,
19 DFP, and AdX that did not allow publishers, including
20 third-party publishers, so non-DFP publishers, to contact
21 AdX and then contact somebody else after AdX. So another
22 buying tool, for example. If they contacted AdX, AdX had to
23 be the last source they contacted.

24 Q How is this terms provision relevant to your analysis
25 about the restriction of real-time bids to DFP?

Direct examination - R. Abrantes-Metz

1 A Well, it, again, confirms that there's really no way to
2 obtain the real-time bids from AdX outside of DFP. In this
3 case, this reinforces the strength of the restriction of
4 accessing full AdX through DFP. Because if you decide to go
5 outside of DFP, not only you do not get the price and,
6 therefore, cannot put AdX, again, in competition with
7 another exchange, but also the third-party publisher ad
8 server must give a last look to inventory that is
9 contacted -- that is provided to AdX even outside of the
10 DFP. So if the publisher decides to go around DFP and
11 contact AdX through AdX Direct, when he does so, it must
12 give a last look to AdX.

13 Q How actively was this provision enforced?

14 A The evidence shows that it was enforced, but there may
15 have been some problems, some difficulties sometimes in
16 enforcing that provision.

17 Q Please turn in your smaller binder to PTX 758.

18 MR. VERNON: Your Honor, 758 is already admitted
19 into evidence and is a document that Professor Abrantes-Metz
20 relies upon in her report.

21 THE COURT: All right.

22 BY MR. VERNON:

23 Q Let's start with the first page ending in 945. In the
24 second email from the top, it's from Ms. Sarah Sluis. Do
25 you see that?

Direct examination - R. Abrantes-Metz

1 A Yes.

2 Q She asks Mr. Avery to explain how AdX tags work. Do
3 you see that?

4 A Yes.

5 Q And AdX tags is another way of referring to AdX Direct?

6 A Yes.

7 Q And then Mr. Avery explains how AdX tags or AdX Direct
8 works. Do you see that?

9 A Yes.

10 Q What does his explanation show?

11 A Well, it explains what I mentioned earlier. This is
12 that when the publisher contacts AdX through AdX Direct --
13 therefore, outside of DFP -- what are AdX returns is binary.
14 It either lets the publisher know whether it is going to
15 serve the ad or not, but it does not return a price. So as
16 stated here, you never actually find out the price in one
17 ad.

18 Q And the third email from the top from Mr. Avery, he
19 writes -- this is the first line towards the end of the
20 first line. "You can set a floor price, but you can't have
21 it compete with other tags."

22 A Yes.

23 Q What does this show?

24 A Well, this shows the -- this confirms what I was
25 explaining earlier, which is if you contact AdX outside of

Direct examination - R. Abrantes-Metz

1 DFP, you are unable to put AdX in simultaneous competition
2 with other sources. Effectively, you can't have AdX as
3 being an inclusive part of an auction also with other demand
4 sources.

5 Q You can set that aside, and we will turn to the
6 restriction of Google Ads to AdX. To avoid repetition, I
7 won't ask you to explain what this is.

8 Why did you conclude that this conduct was
9 exclusionary?

10 A Well, this conduct restricts access of Google Ads to
11 AdX with an exception I'll discuss next. Therefore, that
12 means that a publisher who wants to contact -- obtain demand
13 from Google Ads must go through AdX.

14 That also means that other exchanges who would
15 have liked to be able to contact Google Ads are unable to do
16 so at any price. There's no price that a competitor of --
17 an exchange competitor of AdX can offer to be able to access
18 Google Ads.

19 So my conclusion is that this conduct harmed
20 competition.

21 Q Let's go market by market. How does the restriction of
22 Google Ads to AdX affect competition in the publisher ad
23 server market?

24 A So these restrictions of Google Ads to AdX amplifies
25 the effect of the restriction of AdX and DFP. That's

Direct examination - R. Abrantes-Metz

1 because if the publisher values access to Google Ads,
2 because it is a large and unique demand source, the
3 publisher has to transact on AdX. But if the publisher
4 wants to get the real-time price from AdX, then the
5 publisher must use DFP.

6 Q How does the restriction of Google Ads to AdX affect
7 competition in the exchange market?

8 A Well, as I mentioned earlier, no other exchange with
9 that exception we'll discuss can access Google Ads, and no
10 one can access in full even if they set their price to zero.
11 So there is no way they can compete for Google Ads demand
12 and because that's a large and unique demand source that
13 affects their ability to grow and to compete, to gain skill,
14 and become effective competitors.

15 Q How does the restriction of Google Ads to AdX affect
16 the price that AdX was able to charge?

17 A Well, Google Ads was important and unique, and it was
18 valuable. That can be seen in the documents, for example,
19 from Google, the importance of Google Ads exclusivity to
20 AdX. And documents show that that was an important reason
21 why AdX was able to charge a supracompetitive fee.

22 Q And what do you mean by the words "supracompetitive
23 fee"?

24 A A supracompetitive fee, the fee is the price that AdX
25 charges. It is a fee that is higher than should have

Direct examination - R. Abrantes-Metz

1 existed if the market was competitive, meaning if the market
2 had not been tainted by the conduct at issue.

3 Q What evidence did you rely on to analyze whether AdX's
4 take rates were supracompetitive?

5 A For example, I looked at the take rates of AdX compared
6 to take rates of other exchanges for most recent years for
7 which data was available and, of course, comparing a very
8 large exchange against smaller exchanges. And, therefore, a
9 larger exchange is able to benefit from scale effects and is
10 able to price more cost efficiently and benefits from other
11 factors related to scale as well, as Professor Weintraub
12 discussed.

13 But still, what we observe over time is that AdX's
14 take rate is just about flat at 20 percent the whole time
15 while other competitors' take rates are decreasing for the
16 most part over time.

17 The last several years those competitors, despite
18 being so small compared to AdX, have been able to also
19 charge significantly lower than AdX. And most strikingly,
20 AdX's take rate pretty much remains flat, unresponsive to
21 changes in market conditions and high.

22 In addition, there were a variety of documents
23 from Google that explain the value of these exclusivity to
24 the ability of Google to charge a supracompetitive fee;
25 namely, there are documents where Google explains that if

Direct examination - R. Abrantes-Metz

1 they take away that exclusivity, they will no longer be able
2 to charge such a large fee because there isn't -- because
3 the service that AdX provides, which is comparing bids
4 against each other, is not worth the take rate that is being
5 charged.

6 The take rate -- the high take rate being charged
7 is associated, amongst other things, to the exclusivity, the
8 value that Google Ads brings to AdX.

9 Q I think one of the things that you mentioned was that
10 AdX's take rate was staying flat while other competitors'
11 take rates were changing over time.

12 How does that affect your analysis of whether
13 AdX's take rates were supracompetitive?

14 A In my experience as an antitrust economist reviewing
15 and analyzing prices in a variety of markets, detecting
16 potential market abuse, that in and of itself is consistent
17 with market power because you have a very large player that
18 charges a fee that is higher than everybody else and is
19 constant over time and is unchanged by changing market
20 conditions.

21 Q Based on economic principles, how is Google charging a
22 supracompetitive price for AdX affect publishers and
23 advertisers?

24 A Well, both of them are going to pay part of this fee.
25 So if the AdX fee is too high, both publishers and

Direct examination - R. Abrantes-Metz

1 advertisers are being harmed because they share the burden
2 of the extra charge in this price.

3 Q And just briefly, how does the restriction of Google
4 Ads to AdX affect the scale of rival exchanges?

5 A Well, it lowers the scale of rival exchanges compared
6 to what would have existed had this exclusivity not existed.

7 Q What quantitative evidence have you relied upon
8 regarding how the restriction of Google Ads to AdX affects
9 rival exchanges?

10 A There's a wide amount of evidence produced in this case
11 inclusive of Google's own documents. Google ran several
12 experiments that quantifies what would be the impact of
13 relaxing this conditioning of Google Ads to AdX.

14 And, for example, in some of the experiments from
15 2011 and '12, Google estimated that AdX would have lost
16 between 30 to 50 percent of its revenues if Google Ads were
17 no longer exclusively accessible through AdX. So those
18 transactions would have gone somewhere else, naturally to
19 rival exchanges.

20 Q Did Google partially relax the exclusivity of Google
21 Ads to AdX at some point?

22 A Yes.

23 Q And can you explain that a little bit?

24 A So, effectively in 2015, Google allowed Google Ads to
25 bid across other exchanges through a program called AWBId,

Direct examination - R. Abrantes-Metz

1 but that program related only to specific type of
2 impressions, most prominently what's called remarketing
3 impressions. For those type of impressions, Google Ads'
4 advertisers through AWBid would be able to bid across
5 exchanges.

6 Q Does Google's partial relaxation of this exclusivity
7 through AWBid change your conclusions?

8 A No, it does not. To start, this related only to a
9 small portion of the impressions. So from 2015,
10 approximately only on average 3 percent of impressions
11 transacted from Google Ads were placed outside of AdX. The
12 latest number from 2023's just 9 percent. And if anything,
13 it reinforces my opinion that this exclusivity could have
14 been relaxed more broadly because, after all, it was
15 feasible to have Google Ads' advertisers bid across
16 exchanges because they were doing so through AWBid.

17 Q Please turn in your binder to Demonstrative 1. I think
18 it's the first tab.

19 What does this demonstrative show?

20 A This demonstrative shows part of the conduct -- the
21 conducts that I have already discussed, which are that
22 Google Ads is accessible only through AdX, and anyone, any
23 publisher, who wants access Google Ads will have to go
24 through AdX and, therefore, will have to go through DFP.

25 And it also shows that any publisher who wants to

Direct examination - R. Abrantes-Metz

1 gain access to AdX's real-time price to know what is AdX's
2 willingness to pay for its product and be able to compare
3 with other sources must use DFP. So these conducts enhance
4 DFP's market power in the publisher ad market leading to a
5 91 percent share as of now.

6 Q And let's turn to the next demonstrative, Demonstrative
7 J. It should be the next tab.

8 What does this demonstrative show?

9 A This demonstrative shows that because when DFP is --
10 has market power in the publisher ad server and is left as,
11 really, almost only the only possibility in that market,
12 certainly, the only one with real-time access to AdX, DFP,
13 in turn is able to give back to AdX particular exclusive
14 privileges that no other rival exchanges have. These are
15 the exclusive first look to AdX and exclusive last look to
16 AdX over remnant inventory and later on UPR.

17 Q And so for the three conducts listed in the red arrow,
18 how do those three conducts affect AdX?

19 A All of those conducts were rules of DFP that were
20 designed toward AdX that enable AdX to enhance its market
21 power and enable AdX to charge a supracompetitive fee.

22 Q And so if you look at the conducts depicted on the
23 previous slide and this slide together, what effect did
24 those conducts have on the ad server market and the ad
25 exchange market?

Direct examination - R. Abrantes-Metz

1 A When you look at all of those conducts together, DFP
2 helps AdX and AdX helps DFP either directly or also through
3 its exclusivity with Google Ads. And that makes it very
4 hard for any publisher ad server to compete for publishers'
5 business because the only way to access the valuable demand
6 available on AdX in real-time is DFP and, therefore, harms
7 competition in the publisher ad server market.

8 And in turn, it also harms competition in the ad
9 exchange market because other ad exchanges are, in some of
10 the cases, completely foreclosed -- for example, with Google
11 Ads -- to compete for that demand at any price. And with
12 other conducts, they are sometimes also completely
13 foreclosed from competing, for example, for the exclusive
14 first look position over the remnant waterfall.

15 Q So you can set that demonstrative aside.

16 Let's start relatively earlier in time with first
17 look. And, again, to avoid repetition, I won't ask you to
18 describe how first look worked.

19 Why did you conclude that first look was
20 exclusionary?

21 A So what exclusive first look to AdX does is DFP grants
22 AdX the exclusive first position in the remnant waterfall.
23 That means other demand sources are ordered according to a
24 certain rule -- for example, historic average prices -- but
25 AdX and only AdX gets to skip the line. AdX does not have

Direct examination - R. Abrantes-Metz

1 that rule. AdX just goes on top of the line after others
2 are ordered and gets the exclusive first look over remnant
3 inventory.

4 And the reason that is exclusionary is because, as
5 I mentioned earlier, when you limit the ability of customers
6 to choose, you often also -- and in this case also -- limit
7 the ability of competitors to effectively compete for a
8 position.

9 In particular in this case, this is a DFP rule
10 that restricted its own publisher customers of DFP to decide
11 who they saw fit to go first in line in the remnant
12 waterfall. So those publishers may have thought that
13 somebody else, sometimes at least, besides AdX would have
14 given them a higher revenue, and they would have liked to
15 have placed them on top of the remnant waterfall. And if
16 they had had that choice, then there would have been
17 competition from demand sources exchanges for that first
18 look position. And that competition was not able to exist
19 because of the conduct; and therefore, this conduct was
20 exclusionary.

21 Q What effect did first look have on competition in the
22 exchange market?

23 A Well, as I mentioned, these exchanges are not able to
24 complete at any price for that exclusive first look in the
25 remnant waterfall. So they were harmed by the conduct, and

Direct examination - R. Abrantes-Metz

1 the evidence shows that competition in the ad exchange
2 market as a whole was harmed.

3 Q And how did first look affect the scale of rival
4 exchanges?

5 A Well, getting to first look was an important position
6 because you get to have the right of first refusal to
7 inventory that is often probably very valuable. So that
8 impaired rivals' ability to compete for that and impaired
9 their skill because this doesn't happen just one time. It's
10 a conduct that happens multiple times a day and throughout
11 several years. It impairs their ability to grow and
12 effectively compete in the ad exchange market.

13 Q How did first look affect publishers' revenue?

14 A Publishers lost from first look. Publishers -- there
15 are instances where publishers could have gotten a better
16 price from, say, for example, the second- or third-in-line
17 exchange, and they would -- if they could, they would have
18 liked to place that other source at the top of the remnant
19 waterfall, but they were unable to do that. And, therefore,
20 publishers left money on the table every time that another
21 exchange down the waterfall had a higher price that could
22 have been given to the publisher than the price AdX paid
23 just because the right of first refusal.

24 Q And what analysis have you done regarding the effect of
25 first look on publishers' revenue?

Direct examination - R. Abrantes-Metz

1 A I looked at some analysis Professor Milgrom, one of
2 Google's experts, put forward and calculated, according to
3 his own simulations, the effect of exclusive first look to
4 AdX on publishers.

5 Q And what did your calculations show?

6 A So this calculation showed the following: Professor
7 Milgrom's simulations simulated first, in one situation, how
8 often was it if publishers were not forced to put AdX first?
9 If they could freely choose somebody else to go ahead of the
10 line, how often did that happen?

11 And his numbers show, reveal, that, according to
12 his own simulations, when publishers are able to freely
13 choose who to put on the top of the remnant waterfall, only
14 8 percent of the times they chose AdX. So only 8 percent of
15 the times they believed that AdX had the highest price and,
16 therefore, should go first. And 92 percent of the times the
17 publishers chose another exchange.

18 And, obviously, this is a very logical result
19 because customers cannot be made better off by being imposed
20 a restriction on their choices. At best, some customers are
21 not impacted by the restriction. For example, this
22 8 percent were not impacted. They would have chosen AdX
23 first no matter what. But 92 percent of them decided that
24 somebody else was better. And therefore, those lost
25 revenues and were made worse off by the exclusive first look

1 to AdX in the remnant waterfall.

2 Q Let's turn to PTX 1539 in your binder.

3 MR. VERNON: Your Honor, there is a document that
4 Professor Abrantes-Metz relies upon, and it's also on
5 Google's exhibit list at DTX 343.

6 THE COURT: I assume, therefore, there is no
7 objection.

8 MR. ISAACSON: No objection, Your Honor.

9 THE COURT: All right. 1539 is in.

10 BY MR. VERNON:

11 Q Let's turn to the page ending in 105 or the second page
12 and let's focus on the large paragraph second from the
13 bottom that refers to PubMatic.

14 Do you see that?

15 A Yes.

16 Q Can you explain what this shows?

17 A Well, first, it states that publishers lose every time
18 the third-party exchange has a higher payout than average
19 and then explains how, for example, if there is a floor of
20 \$1 and AdX goes first and AdX decides that it wants to take
21 the impression, the impression is served at \$1. But imagine
22 that PubMatic, who was ordered below in the waterfall, could
23 instead have offered \$3 to the publisher. PubMatic never
24 gets a chance to beat. And therefore, the publisher lost \$2
25 because it sold the impression for a dollar to AdX due to

1 its privileged first position and lost the opportunity to
2 get \$3 from PubMatic.

3 THE COURT: All right. We're going to need to
4 stop now because it's almost 6:00, and we've got to do some
5 housekeeping matters. Plus, you-all have to clear your
6 desks because I have a criminal matter tomorrow morning at
7 8:30.

8 Doctor, thank you very much. We'll need you back
9 here, but I'm not sure what time.

10 How long do you estimate the witness who you're
11 going to call first tomorrow is going to take?

12 MS. WOOD: I would estimate between an hour and a
13 half and two and a half hours given the rate they've been
14 going, but it's very difficult because it is also a witness
15 on Google's witness list.

16 THE COURT: All right. So I know you're coming to
17 court and watching the proceedings, but you won't be
18 testifying right away. So if you want to get some extra
19 coffee or whatever, you may.

20 All right. Thank you for your testimony so far.

21 MR. VERNON: Your Honor, I have one clarifying
22 question. Since this is our first expert that's been held
23 over -- we know she's not supposed to review anything other
24 than her report. Is it okay if she reviews an unmarked copy
25 of her report, or would Your Honor prefer that we not even

1 do that?

2 THE COURT: No. I mean, I think as long as it's
3 her report, she can certainly review it, yeah, especially
4 with the experts. You've let them sit through the whole
5 trial. So, I mean, it's not the same rule as we would
6 normally have with witnesses. All right.

7 MR. VERNON: Meaning a copy of her report that
8 doesn't have notes or anything like that.

9 Thank you, Your Honor.

10 THE COURT: All right. That's fine.

11 All right. Let's make sure that we get the --
12 now, again, the boxes can stay here, but your desks have to
13 be cleaned off for tomorrow morning. All right? I only
14 have one criminal matter. And so unless it gets
15 complicated, I think by ten of 9:00 you should have access
16 so we can reset and hopefully start at 9:00 on the dot. All
17 right?

18 MR. TEITELBAUM: Your Honor, could I just ask
19 about maybe hopefully one easy housekeeping item with
20 respect to an exhibit?

21 We have a stipulation with Google about PTX 15,
22 which relates to the subject matter of Mr. Mohan's
23 testimony, which we would move into evidence at this time
24 with the Court's permission.

25 MS. RHEE: No objection, Your Honor.

1 THE COURT: All right. So Plaintiff's Exhibit 15
2 is also in evidence.

3 MR. TEITELBAUM: Thank you.

4 THE COURT: All right. So listen carefully --
5 Yes, ma'am.

6 MS. SESSIONS: I apologize, Your Honor. I have
7 one housekeeping matter on behalf of Google as well. There
8 were four exhibits that we had an agreement with the DOJ
9 that could be moved into evidence following Mr. Boland's
10 testimony on Friday and didn't have a chance to do that. So
11 I'd request --

12 THE COURT: All right. Which numbers are they,
13 please?

14 MS. SESSIONS: DTX 365, DTX 712, DTX 813, and DTX
15 498.

16 THE COURT: All right. Those are all in.

17 MS. SESSIONS: Thank you, Your Honor.

18 THE COURT: All right. Now, listen carefully
19 while my courtroom deputy reads the names of all the
20 exhibits that are in. All right.

21 THE COURTROOM DEPUTY: PTX 14, PTX 51, PTX 32, PTX
22 41, PTX 59, PTX 46, PTX 44, PTX 60, PTX 85, PTX 88, PTX 58,
23 DTX 37, DTX 59, DTX 76, DTX 101, DTX 189, DTX 47, DTX 80,
24 DTX 184, DTX 45, DTX 126, DTX 150, PTX 1779, PTX 1314, PTX
25 1333, PTX 1334, PTX 1335, PTX 1336, PTX 1466, PTX 1035, PTX

1 432, PTX 518, PTX 860, DTX 312, DTX 1126, PTX 1317,
2 PTX 1316, PTX 1315, DTX 2526, PTX 1326, PTX 1327, PTX 1328,
3 PTX 1329, PTX 1331, PTX 1332, DTX 313, PTX 1323, PTX 1646,
4 PTX 1781, PTX 1539, PTX 15, DTX 365, DTX 712, DTX 813, and
5 DTX 498.

6 MS. WOOD: Your Honor, the government had one
7 exhibit, but we'll check the transcript. We may have just
8 written it on our list wrong. We had PTX 1035 in connection
9 with Professor Weintraub.

10 THE COURT: 1035 was recited. I heard her.

11 MS. WOOD: After 860?

12 THE COURT: No. I heard after 1466.

13 MS. WOOD: Oh, I see it. It was admitted
14 previously.

15 THE COURT: 1035 was admitted, yes.

16 MS. WOOD: We're all in agreement. Thank you.

17 THE COURT: Excellent. All right. Very good.

18 So then we'll shut down for tonight, and we'll see
19 you all back here at 9:00 tomorrow morning.

20 -----
Time: 6:03 p.m.

21
22 I certify that the foregoing is a true
23 and accurate transcription of my stenographic notes.

24
25 /s/
Rhonda F. Montgomery, CCR, RPR